Ermeneia
Studi & Strategie di Sistema

15

Health&Hospitals in Italy

15th ANNUAL REPORT 2017

COLLANA
Aiop
Associazione Italiana
Ospedalità Privata

FrancoAngeli
OPEN ACCESS

This Report has been edited by **Nadio Delai**, in collaboration with Ermeneia - Studi & Strategie di Sistema in Rome and AIOP - Italian Association of Private Hospitals. To this end, a technical work group has been established made up of Angelo Cassoni, Filippo Leonardi, Annagiulia Caiazza, Alberta Sciachì, Stefano Turchi, Fabiana Rinaldi, Peppino Biamonte, Paolo Parente and Nadio Delai (Ermeneia).

Furthermore, an Address Committee has also been created to achieve the project; it is made up of Gabriele Pelissero, Emmanuel Miraglia, and Filippo Leonardi.

We wish to thank the staff at AIOP national and regional offices for their efforts in collecting and organizing data in AIOP's internal system.

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Note

This text is an abstract of the Report on "Ospedali & Salute", the 15th edition of which was presented to the Senate of the Republic – Cloister of the Convent of Santa Maria Sopra Minerva – Capitolare Room on January 17th 2018.

The primary objective of AIOP (Italian Association of Private Hospitals) is to contribute to improving knowledge of the Italian health system at an international level, by providing European institutions, professionals and scholars with data and assessments which in some cases also relate to 2017.

Following the introduction written by the President of AIOP, Mr. Gabriele Pelissero, Part One of the abstract highlights major health issues which have emerged in the last year, and analyzes supply and demand issues, focusing in particular on the quality of services and on citizens' opinions, as expressed in a special survey.

Part Two provides a set of indicators regarding equipment, information on hospital activities and expenses, as well as a complete sample of data for the Italian hospital system as a whole.

Finally, details of the method used to conduct the survey of Italian families and a complete list of the contents of the 15th Report are also provided.

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The future of healthcare in Italy

by Gabriele Pelissero, National President of AIOP

1. A precarious balance

The Italian National Health Service was, as we have observed in the past[1], inspired at its founding by the Beveridge-type system, but with significant differences from the original British model right from the beginning.

Its main features are well known, but for the purposes of our thinking to the future we should briefly mention some of them here.

The system was founded on the two pillars of universal and inclusive care.

Universal means offering access to all Italian citizens, and more recently even to non-citizen residents, to the services of prevention, care and rehabilitation indicated in the base levels of assistance (LEA), which in fact contain almost all existing health services.

Inclusive means financing through general taxation, and thus by methods that are completely inherent to the public spending sector.

These two basic features contain critical issues.

Universal coverage, in fact, can fall short if the right to it does not coincide with adequate accessibility, as for example, if long waiting lists exists, or if the quality – real or perceived – of the services falls below a minimum level thus discouraging the use of the services offered by the system.

Inclusiveness is linked to spending capacity and national and international constraints placed on public spending.

If this shrinks beyond a certain limit the resources become insufficient to ensure the volume and/or the quality of the services.

[1] Pelissero G., "Organizzazione Sanitaria" in *Igiene,* Meloni C. and Pelissero G., Casa Editrice Ambrosiana, 2007; Pelissero G., "Il Sistema Sanitario Italiano – Una realtà in continua evoluzione", in Pelissero G. e Mingardi A. (edited by), *Eppur si muove*, IBL Libri, 2010; Pelissero G., *La sanità della Lombardia*, FrancoAngeli, 2010.

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These brief observations demonstrate how the functionality of the NHS is in fact constantly held in a precarious equilibrium and that the change in the availability of resources and the ability to provide services of an adequate quantity and quality are able to continually alter the proper dynamics.

Furthermore, the Italian NHS features some variations on the traditional Beveridge model in the form of the role of the Regions (and of the Autonomous Provinces of Trento and Bolzano which are here assimilated to the Regions for this discussion), and the plurality of the providers, both conditions which introduce strong elements of differentiation, and in part also competitiveness, that do not adhere to the centralist and statist conception of the original model.

Moving on from these premises to contemplate the future, we can begin by first considering the main characteristics and the dynamics of that indispensable financial driver: public spending.

2. Characteristics of Italian public spending

The characteristics, and the critical aspects, of the Italian economy and in particular of public spending are well known.

We limit ourselves here to observing (Figure 1) the substantial stability in the last 7 years, expressed as a percentage of GDP.

Turning our attention to healthcare, we can see that it accounts for 13% (Figure 2) of public spending in 2015, an indisputably large percentage, which must, however, be seen in the light of at least two data: in comparison with other European countries and, in comparison with other spending items.

To this end, Figure 3 seems to shed some light on the matter. First of all, we may indeed see how, in 2015, total public spending in Italy was much higher than the average of the EU-15 countries, certainly the most comparable with Italy, amounting to 52.2% of GDP compared to a average of 44% in the EU-15.

Yet, if we take a look at the big spending allotments, we can see how Italy outperforms other countries in debt servicing (4.7% of GDP compared to 2.2%), and pension spending (15.7% of GDP compared to 11.2%), and slightly for public order and security (1.9% of GDP compared to 1.6%), and spending for environmental protection (1% of GDP compared to 0.7%).

On the contrary, the greatest restraints are found with education (4% of GDP compared to 4.4%) and healthcare (6.8% of GDP compared to 7.4%).

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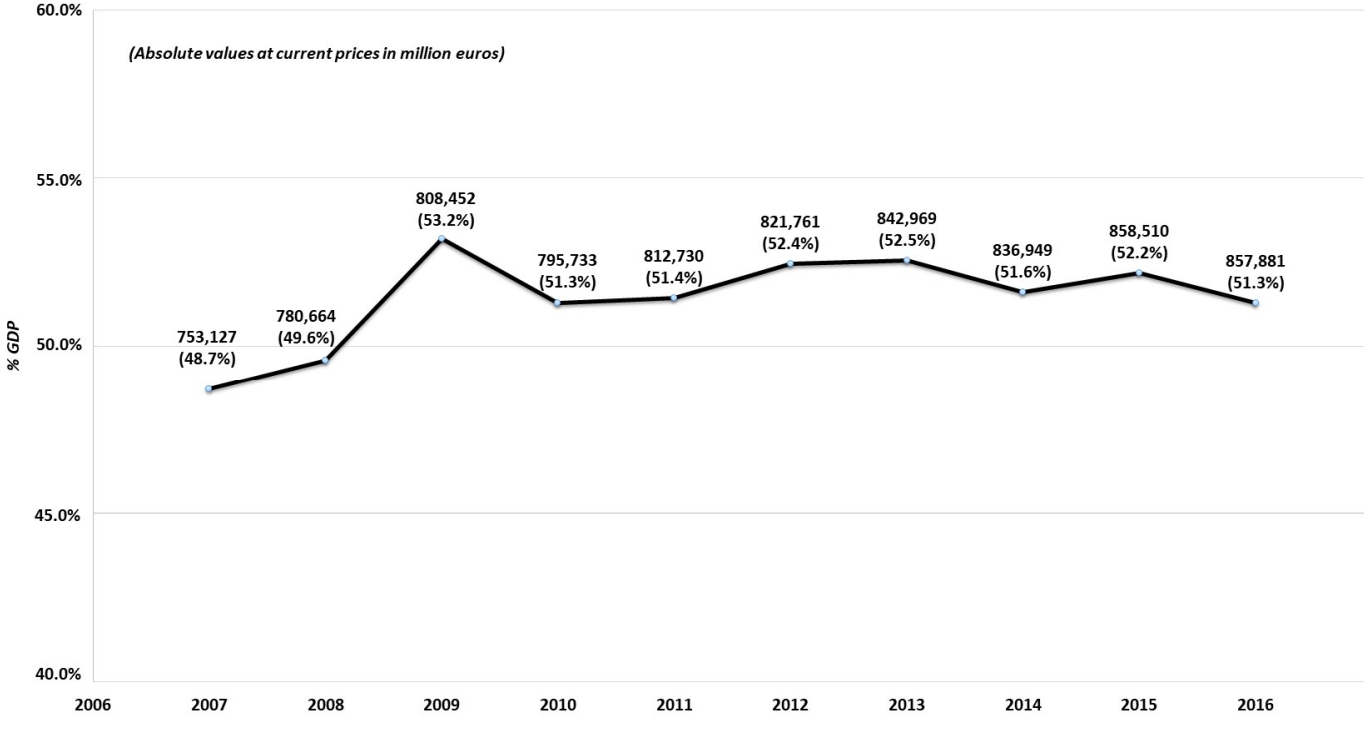
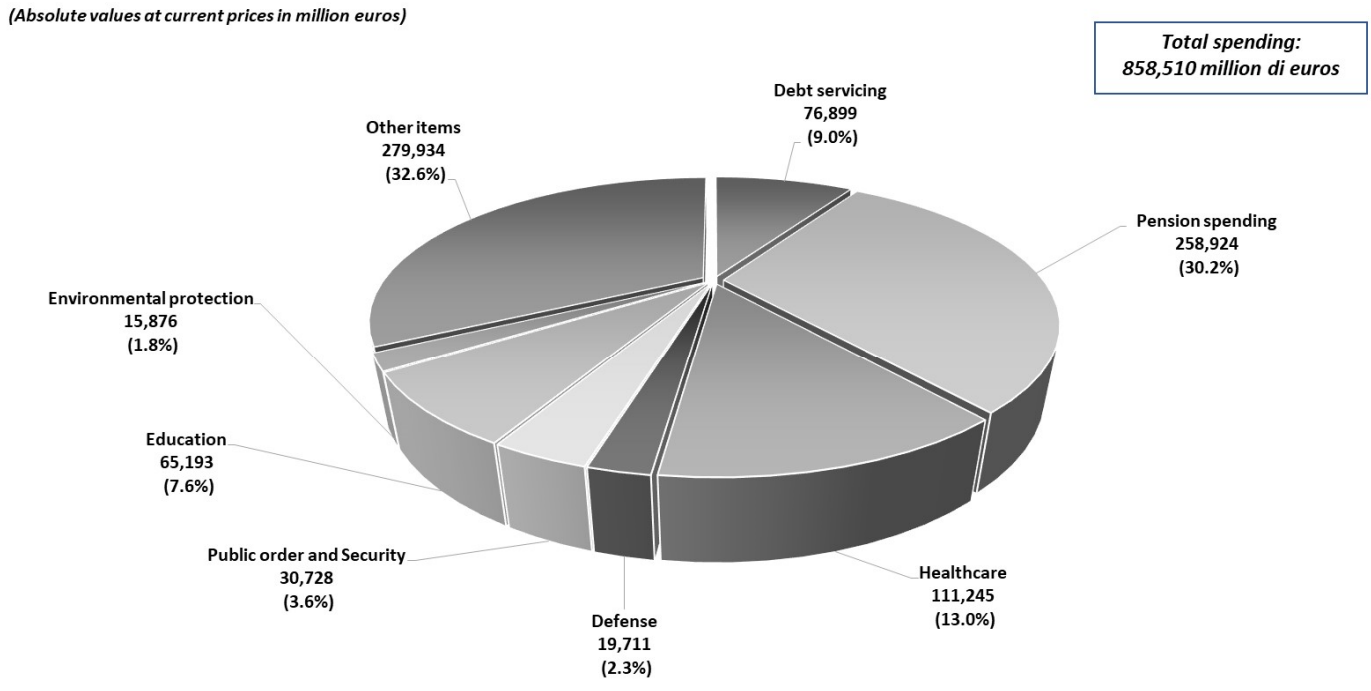
Fig. 1 - Italian public spending, Years 2007-2016 (Absolute values and percentages of GDP)



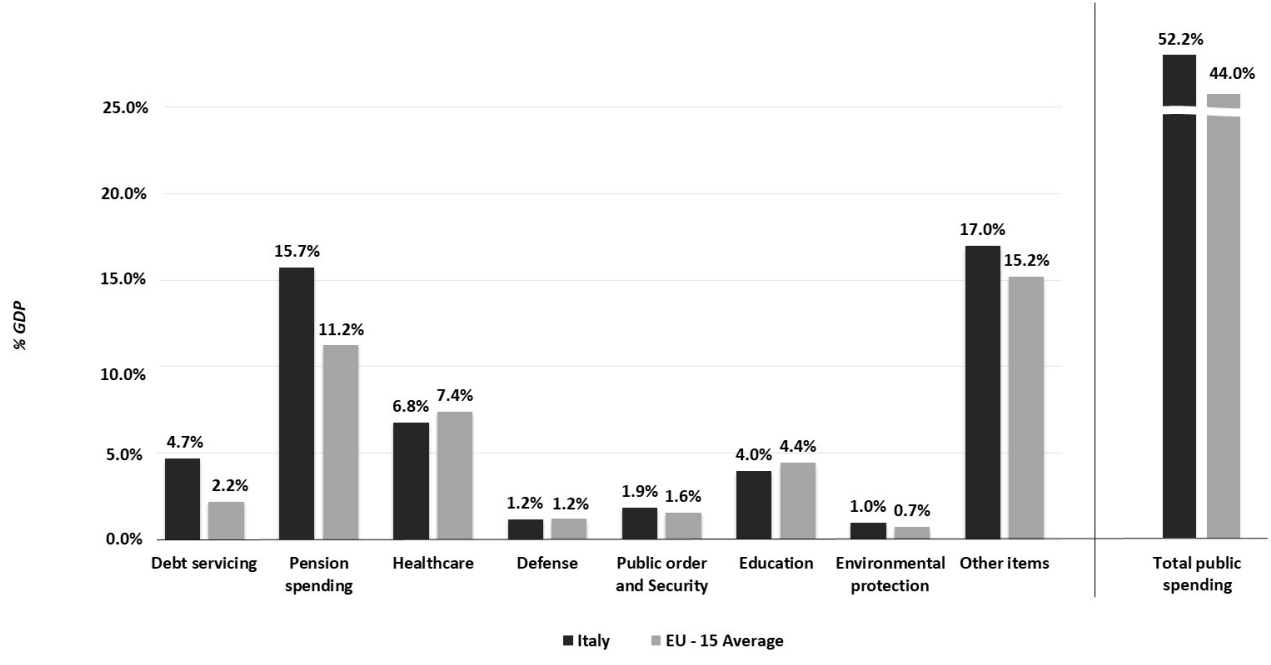
Source: *Ministry of Economy and Finance, Economic and Financial Document (Analysis and Trends of Public Finance, Years 2011-2017) ISTAT, National economic accounts*

Fig. 2 - Italian public spending by functions, Year 2015 (Absolute values and percentages)



Source: *Court of Auditors, 2017 Report on the coordination of public financing; ISTAT, Final consumption expenditure of households, Ministry of Economy and Finance, Economic and Financial Doc. 2017*

Fig. 3 - Italian public spending: comparison between European averages on main spending allotments. Year 2015 (% of GDP)



Source: *Ministry of Economy and Finance, Economic and Financial Doc.; ISTAT, National economic accounts, OECD, Health expenditure; Eurostat, General government expenditure*

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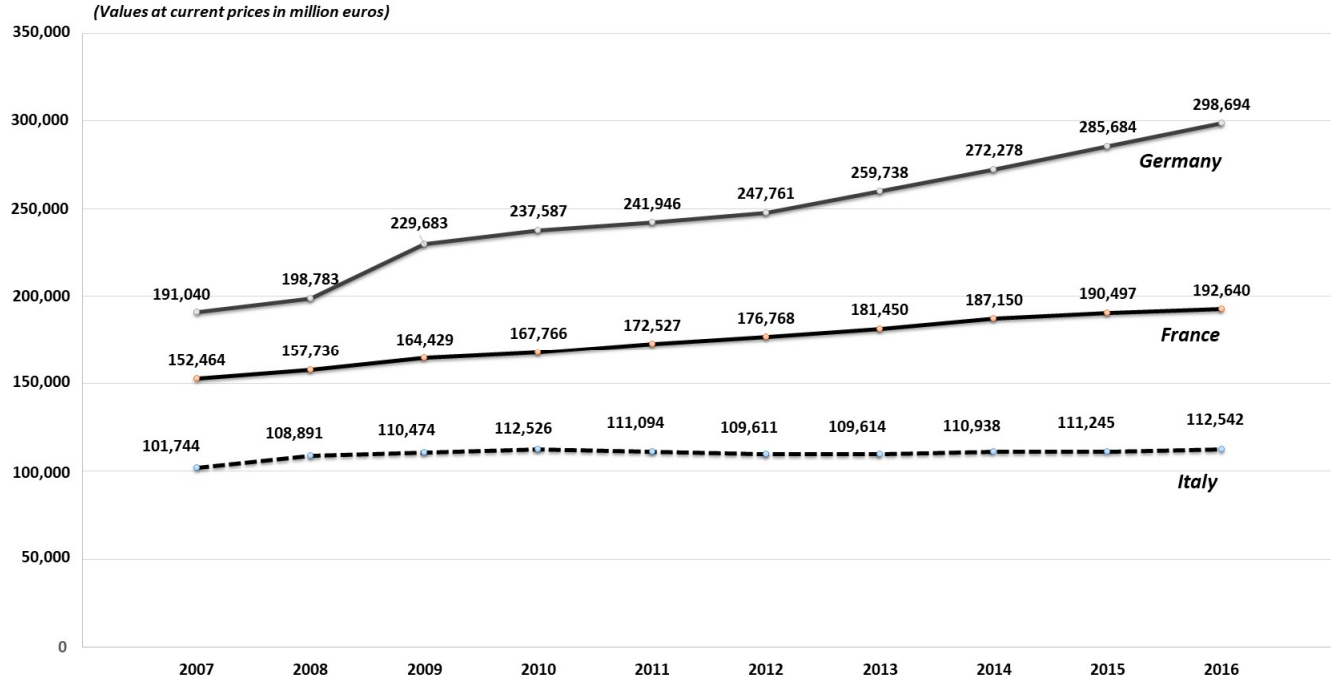
Fig. 4 - Trend over time of public healthcare spending in Italy, France and Germany. Years 2007-2016



Source: *Ministry of Economy and Finance, Economic and Financial Doc. (Analysis and Trends of Public Finances, Years 2011-2017); OECD, Health Data 2017*

This last figure is even greater when the comparison is made with the larger countries more directly comparable with us, such as Germany and France, as shown in Figure 4.

3. Dynamics of healthcare spending

Having already noted the meager Italian public healthcare spending in contrast to the other directly comparable EU countries, we shall now consider its dynamics, and extend our observation to the component of private expenditure.

Figure 5 shows the 10-year trend (2007-2016) of Italian healthcare spending and highlights two fundamental aspects with great clarity. There is a progressive and significant decline in public spending (from 7.3% of GDP in 2009 to 6.7% in 2016, a decline of 8.2%) and absolute stability in private healthcare spending, which has remained stable at 2.1% of the GDP since 2011.

In reporting these data we must remember, incidentally, that all the values shown here in decline can be seen as increasing values if expressed in absolute values, as they refer to a GDP that has increased annually.

However, we believe that the proper assessment of the resources allocated to healthcare must be made on percentage of GDP and not on absolute values, as is also internationally established practice, and as is the case with OECD calculations. This method is supported by the same Court of Auditors (Table 1), which, in the five-year period 2014-2018, viewed public health funding as having declined by over 10 billion euros, despite an increase in absolute values.

On the basis of the evidence presented so far, we can at this point formulate the first of our observations relating to the future.

If the overall dynamics of Italian public spending remain firm (and to many this already seems to be an optimistic hypothesis), if public health spending dangerously approaches the value of 6.5% of GDP indicated by the WHO as the sustainability limit for universal healthcare systems, and if private healthcare spending remains firm, the overall gradual decrease in healthcare resources could generate a profound change in the Italian Beveridge system.

This forecast also seems to be reinforced by official documents.

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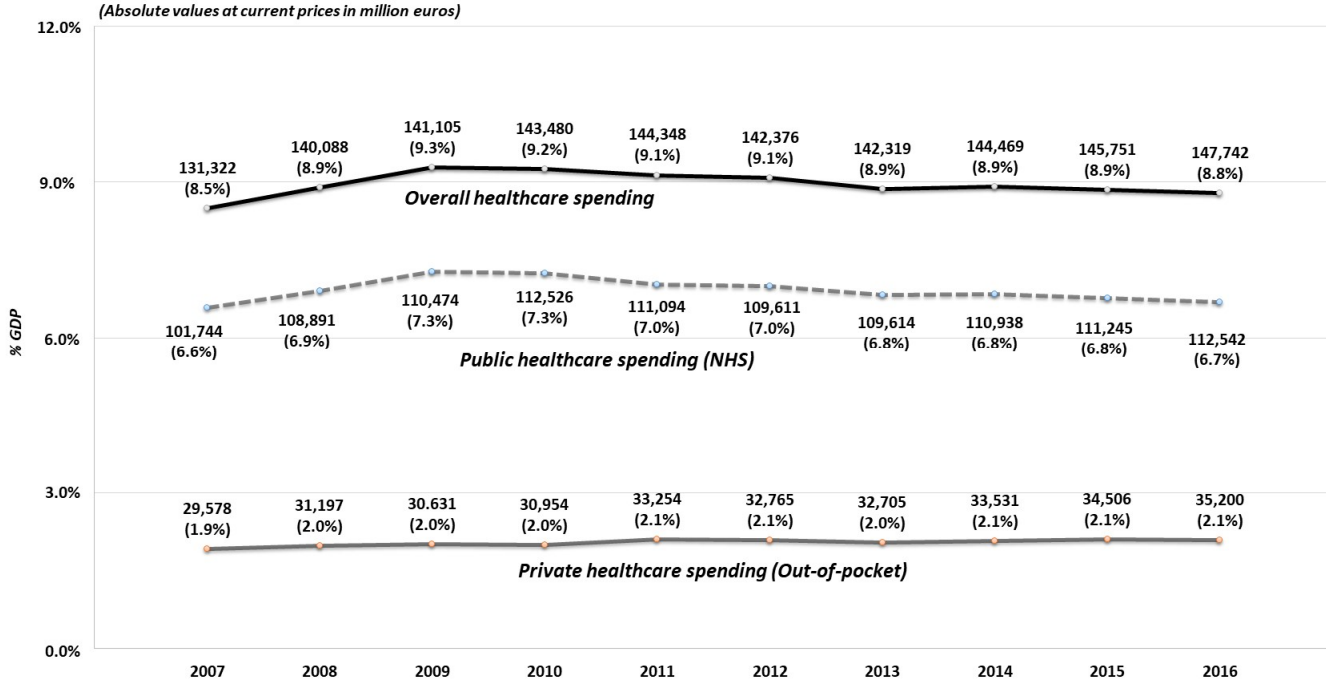
Fig. 5 - Italian public and private healthcare spending, Years 2007-2016 (Absolute values and percentages of GDP)



Source: *Ministry of Economy and Finance, Economic and Financial Doc. (Analysis and Trends of Public Finances), Years 2011-2017, ISTAT, Final consumption expenditure of households*

Table 1 – Balances – Public finance objectives of the NHS fund

Contribution to public finance objectives	*Funding of national healthcare needs*				
	2014	*2015*	*2016*	*2017*	*2018*
– DEF 2014 (expense forecast)	111,474	113,703	116,149	118,680	121,316
– Healthcare Agreement 2010-2012	109,928	112,062	115,444		
– Law 190/2014, Art. 1, par. 167 and 556		112,067	115,449		
– Law 190/2015, par. 398 (Agreement of Feb. 26, 2015)		-2,352			
– DEF 2015 (expense forecast)		111,289	113,372	115,509	117,709
– Decree Law 78/2015, Art. 9-*septies*		109,715	113,097		
– Law 208/2015, Art. 1, par. 568			111,000		
– Law 208/2015, par. 680 (Agreement of Feb. 11, 2016)				-3,500	-5,000
– Redetermination of needs (Agreement of Feb. 11, 2016)				113,063	114,998
– DEF 2016 (expense forecast)			113,376	114,789	116,170
– Law 232/2016, Art. 1, par. 392				113,000	114,000
Funding level	*109,928*	*109,715*	*111,000*	*113,000*	*114,000*
Funding reduction (cumulative effect)		*2,352*	*4,449*	*8,012*	*10,510*

Source: *Court of Auditors – 2017 Report on the financial management of the Regions, 2015 fiscal year*

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4. The culture of disinvestment

The spending review documents entrusted by the Letta Government to Carlo Cottarelli were later published by the Renzi Government. They did not become effective, but they certainly express a culture and a vision that is nevertheless not alien to the government techno-structure, and are part of a larger context of important studies and data processing.

We have already discussed these issues[2] commenting extensively in the 2012 Giarda Report, in which we raised the notion of "expendable spending", indicating healthcare spending as belonging to this category.

In fact, a careful reading of the Report allows one to appreciate the warnings pointed out by the author specifically about healthcare spending, but which describe an overall climate very well. Such a climate is much more evident in the text written by the working group led by Cottarelli and expressing itself on healthcare in the "Proposals for a review of public spending (2014-2016)", dated March 18, 2014.

Page 49 of the document shows the tables with the public spending objectives set out by functions (Table 2) and, as we can see, the benchmarks forecast for public health spending for 2016, which drops drastically to 5.25% of GDP. And with respect to this proposal, it should incidentally be noted that in the OECD area there are only six countries at these levels: Chile, South Korea, Poland, Estonia, Luxembourg, and – with the exception of Luxembourg, which is not comparable in size to the large EU countries – these are certainly not countries with universal and efficient healthcare systems.

If Cottarelli's forecast can be considered to express a certain radical accounting approach, one that is understandably insensitive to social implications, a very different practical finding is conveyed by the Economic and Financial Document prepared by the Presidency of the Council of Ministers and the Ministry of Economics and approved by Parliament in October 2017.

In it, as shown in Figure 6, the level of funding for the NHS decreases by one tenth of a point in GDP from 2018 to 2020, with a value of 6.3%. And this brings us to below the WHO sustainability threshold of 6.5%.

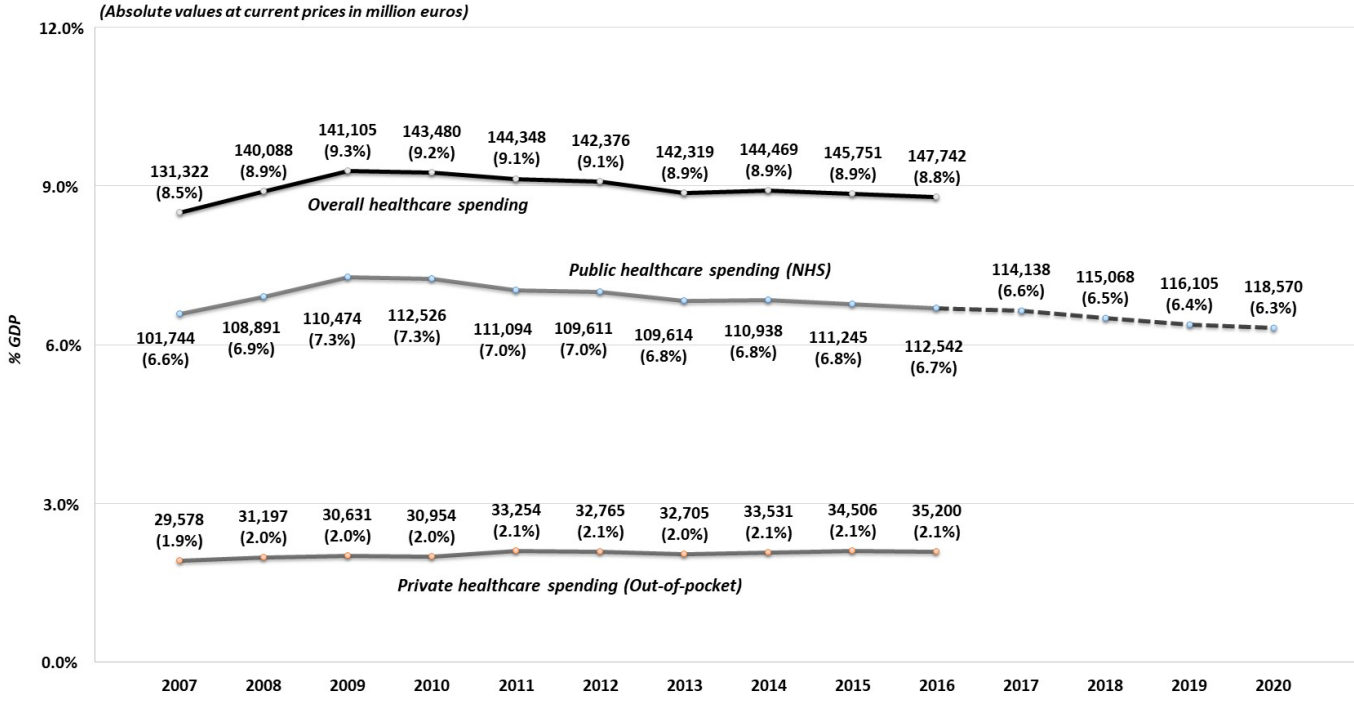
[2] Pelissero G., "*Save our National Health System*", in *Health & Hospitals. 10th Annual Report 2012*, FrancoAngeli, 2013; Pelissero G., "Competizione, sostenibilità e qualità nel futuro del SSN", in Pelissero G. e Mingardi A. (edited by) *Competizione, sostenibilità e qualità. Quale futuro per il welfare sanitario italiano?*, IBL Libri, 2014.

Table 2 – Special Commissioner for the spending review. Proposals for a review of public spending (2014-2016). Distribution of primary government spending by function (as a percentage of potential GDP)

	Italy (a)	*Euro area* (b)	*Benchmark* (c)	*Difference compared to the benchmark* (a - c)
– General public services	3.55	3.53	2.55	1.00
– Defense	1.10	1.25	0.90	0.20
– Public order and security	2.23	1.73	1.25	0.98
– Financial affairs	3.35	4.18	3.02	0.33
– Environmental protection	0.84	0.86	0.62	0.21
– Housing and regional planning	0.64	0.90	0.65	-0.01
– Healthcare	7.05	7.28	5.25	1.79
– Culture and education	4.50	6.26	4.52	-0.01
– Social protection (excluding pensions)	3.74	8.00	5.77	-2.04
Total	*26.99*	*33.98*	*24.53*	*2.46*

Note: Total primary expenditure refers to the preliminary AMECO forecast for 2013. The composition of euro area spending in 2013 is based on the composition in 2011 (Eurostat-COFOG data). For Italy, the composition of spending in 2013 is based on the most recent data available. The item "Defense" for Italy excludes spending for the Carabinieri, which falls under the category "Public order and security". The Euro area countries considered are: Belgium, Germany, Ireland, Spain, France, the Netherlands, Austria and Finland. The benchmark is determined by European spending corrected to take into account the restriction placed on Italy by higher interest expenditure and a different medium-term objective (MTO), as well as the reduction of spending foreseen for the other countries in order for each to reach its MTO. The partial rigidity of pensions (excluded from the table) was also taken into account, and corrected by approximately 0.2 per cent.
Source: *European Commission (AMECO) and Eurostat*

Fig. 6 - Italian public and private healthcare spending, Years 2007-2020 (Absolute values and percentages of GDP)



Source: *Ministry of Economy and Finance, Economic and Financial Doc. (Analysis and Trends of Public Finances), Years 2011-2017, ISTAT, Final consumption expenditure of households*

5. The current situation

Faced with such a financial perspective, we should now take a better look at the current operational situation of the NHS in terms of the use of resources, its main operational activities and the opinions of citizens.

With regard to the use of resources, Figure 7 shows, in a nutshell, the way Italian healthcare spending is distributed among the main items.

As regards public spending, for which the official data unfortunately continues to be aggregated in such a manner that it is not at all clearly legible by function, we can see that nearly two thirds continues to focus on items such as personnel and the purchase of goods and services, which by the Government's own admission has significant efficiency margins.

Spending on the purchase of goods and services from non-public operators (pharmaceutical 7%, hospital 7%, specialist 3.6%) is instead limited, and where it is possible to make a comparison between public and private (Figure 8) shows high levels of efficiency.

Suffice it to say that 28.3% of the hospital activity provided by private operators accounts for only 13.6% of all (estimated) hospital expenditure.

At this point we should point out, incidentally, the existence of an apparently paradoxical situation. How is it possible to explain that an entirely underfunded system (as we saw in the chapter 2 above), one that is still capable of providing a great number of services, can simultaneously display low efficiency levels, as is conspicuously demonstrated in the relationship between costs and production in the publicly managed sector shown in Figure 8?

We believe the paradox is explained by a plurality of factors, such as an overall low level of costs and remuneration compared to other comparable European countries, extremely limited levels of investment and amortization in the public component, a significant advantage in efficiency due to the high number of private operators working at lower costs, and a great flow of patients among the Regions that considerably reduces costs and pressure in the more dysfunctional and inefficient ones. Alongside of all this is the widespread quality of the main professional figures, especially the doctors, and probably also lower quality expectation from a great many users.

The inefficient management of public hospital centers still leaves much to be understood. We believe that this is due to some intrinsic limitations on public management, which inhibit full deployment of efficient administrative activities that the public management itself would be capable of performing.

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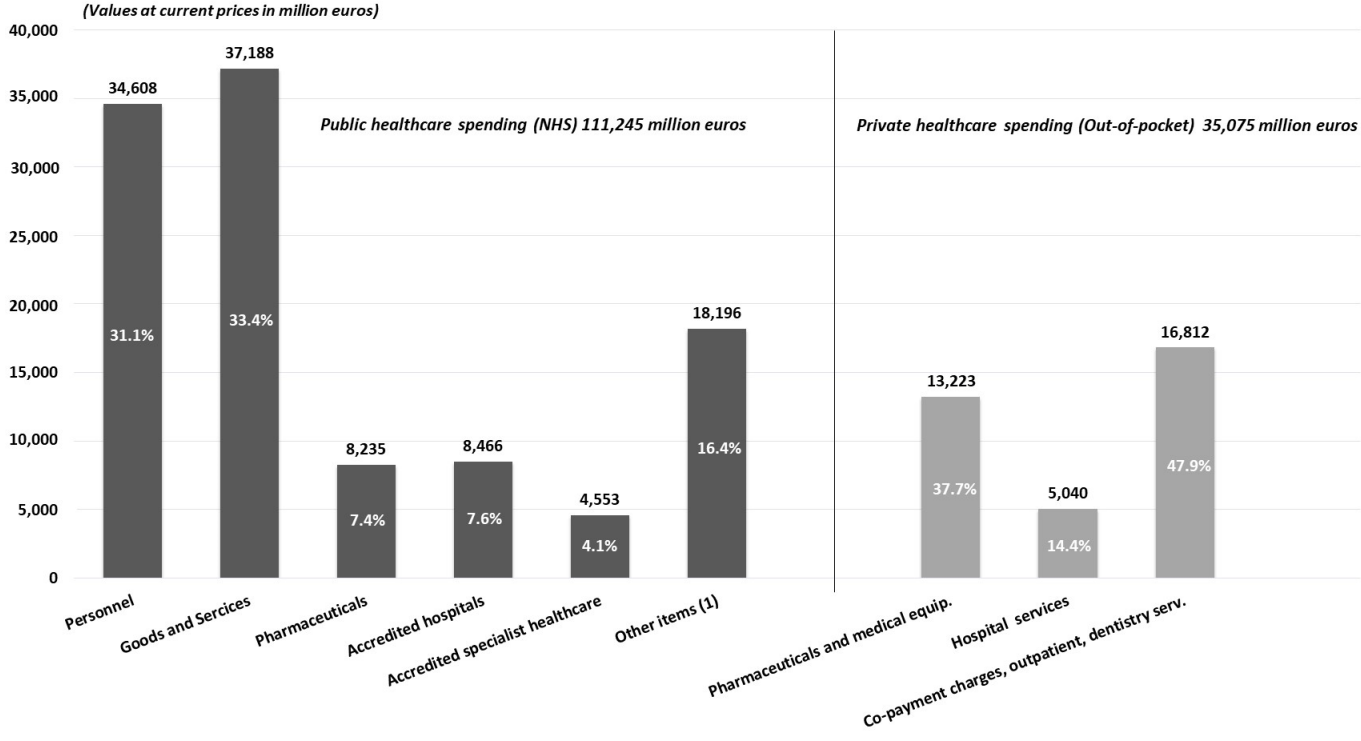
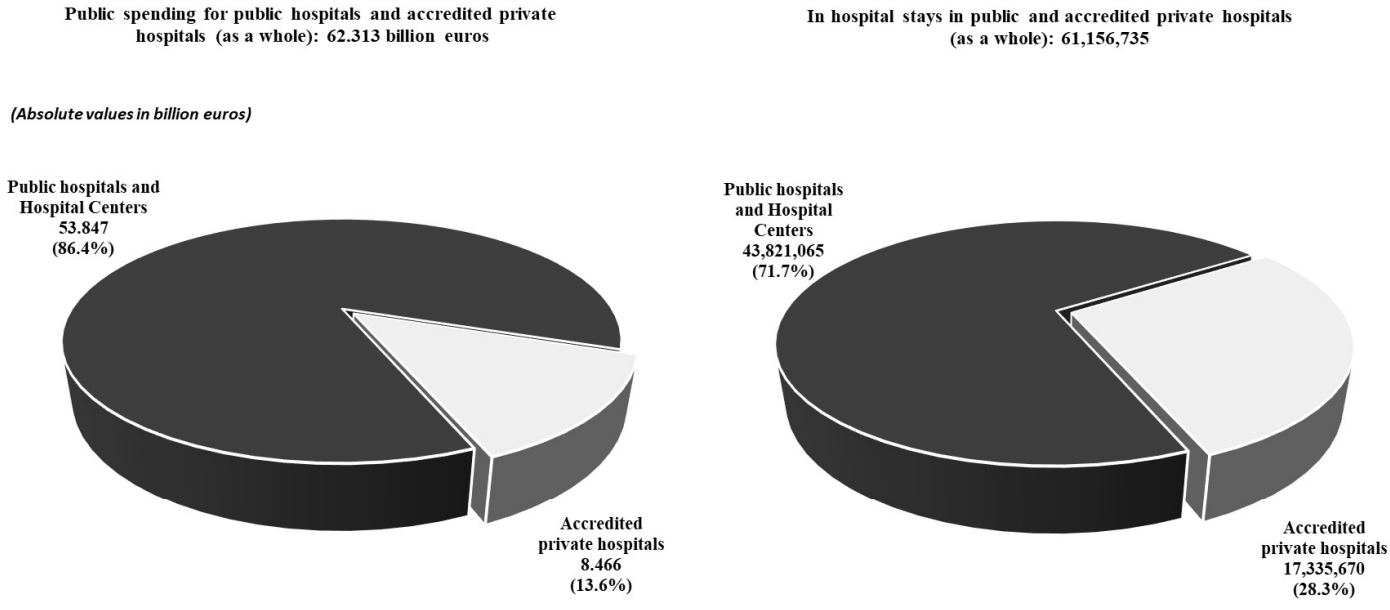
Fig. 7 - Italian public and private healthcare spending, by items, Year 2015



(1) Other public healthcare spending items include basic levels of assistance, other rehabilitation assistance, support and prosthetic assistance (prostheses, orthoses and orthotic aids prescribed by specialists), general expenses, taxes and financial charges.

Source: *Court of Auditors, 2017 Report on Public finance coordination; ISTAT, Final consumption expenditure of households*

Fig. 8 - Hospital activity of the National Health Service: comparison of public-accredited private facilities in terms of public spending and production. Year 2015



Source: *Court of Auditors, 2017 Report on the coordination of public financing; Ministry of Health, SDO Report 2015*

To be more explicit, in the management of the public NHS centers (those owned by the Regions), the needs of the owner to maintain a broad social consensus inevitably inhibit the more incisive efficiency actions that the directors of the centers might wish to perform, triggering a vicious circle which makes it possible to cover losses with supplemental funding.

It is precisely to overcome this limitation that we have long proposed[3] that publicly managed hospitals and hospital centers running budget deficits for a period of three years be assigned a business manager for a sufficient amount of time.

But it must also be said that all this would not be enough without a broader reform, which goes back to placing the service actually provided to the citizen at the center of the attention of the system and of the overall method of financing, reinstating the method of payment for services that Decree Laws 502 and 517 tried to introduce in the early 1990s, though which was never applied in the public hospital center component, which is firmly committed to the inefficient method of cost financing.

Finally, as far as private healthcare spending is concerned, Figure 7 shows how greatly it relates to the purchase of services that are not part of the basic levels of assistance (such as dentistry) or non-intermediary devices (pharmaceuticals and medical equipment), allocating a relatively small amount to services that are also provided by the NHS.

If this is true, we can only imagine that the current out-of-pocket spending on healthcare will be difficult to change, and that the amount presently allocated to the purchase of services corresponding to those provided by the NHS is very small and not capable, at current values, of offsetting a progressive reduction of services financed by public healthcare spending.

The overall effect of this progressive reduction in resources can be clearly seen in the analysis of the phenomenon of patient mobility, which, due to its characteristics and size, is peculiar to the Italian NHS.

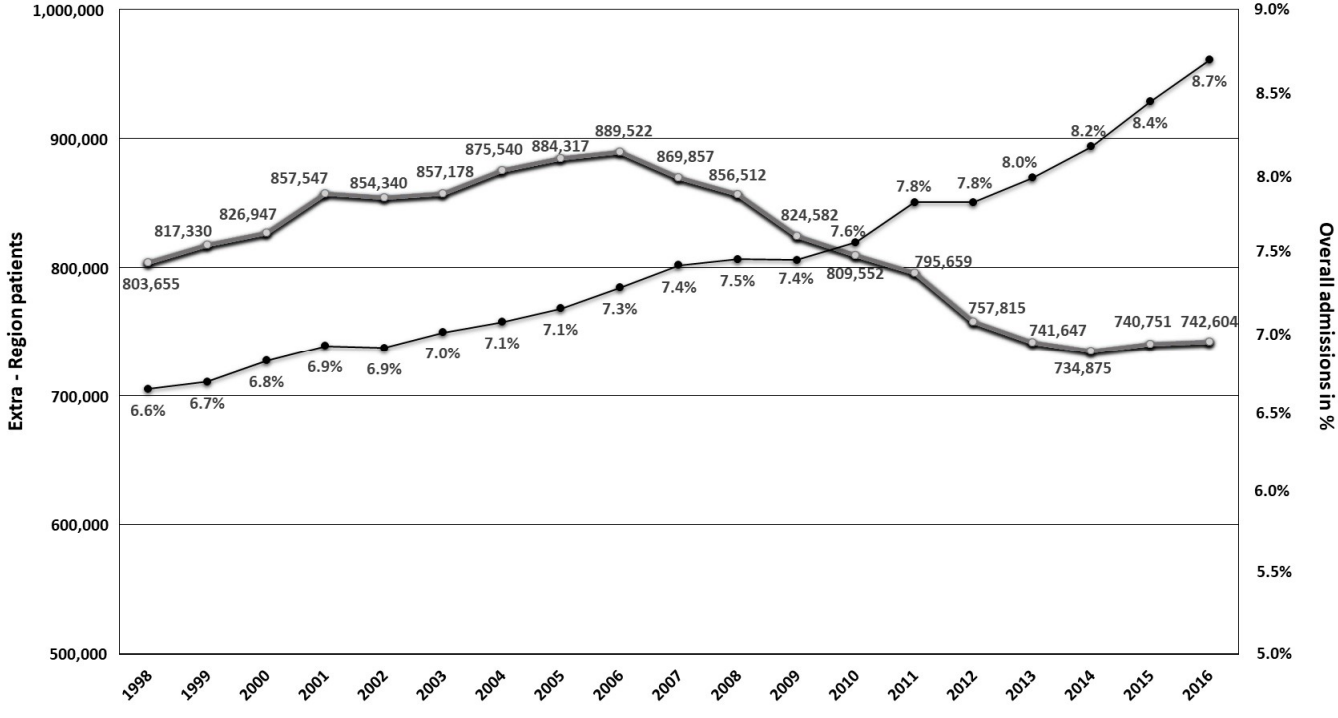
Figure 9 clearly highlights some relevant aspects as regards this.

The first is represented by the trend over time, which shows the interregional mobility of patients requesting hospitalization outside their home Region in continuous growth for almost 20 years.

In fact, the absolute number of mobile patients has experienced a decrease since 2006, though remaining consistently above 700,000 cases a year, yet

[3] Pelissero G., "Turning Point", in *Health & Hospitals. 13th Annual Report 2015*, Franco-Angeli, 2016.

Fig. 9 - Mobility flows over time - Total typologies and admissions. Years 1998-2016



Note: inpatient admissions for acute cases and DH, inpatient rehabilitation and DH, long-stay patients are included.
Source: *data processed by AIOP, based on the Ministry of Health data – Interregional mobility matrices, Years 1998-2016*

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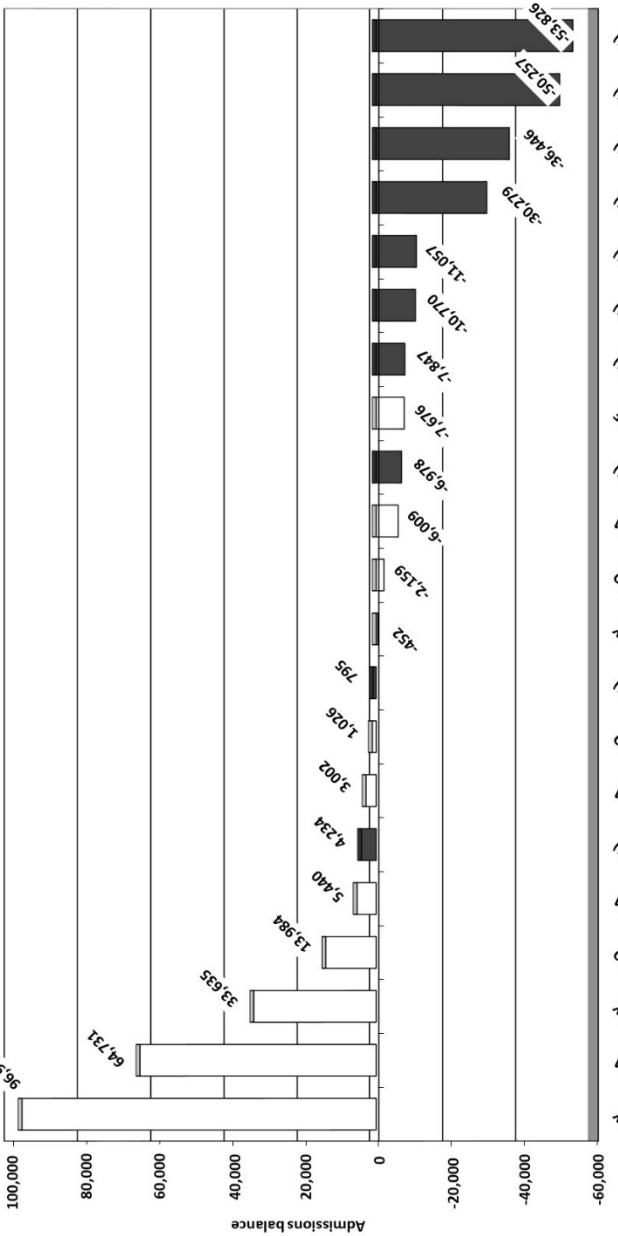
Fig. 10 - Interregional mobility balances - Total typologies and admissions. Year 2016



(1) The Regions that are or have been subject to debt rescheduling.
Note: inpatient admissions for acute cases and DH, inpatient rehabilitation and DH, long-stay patients are included.
Source: *data processed by AIOP, based on the Ministry of Health data – Interregional mobility matrices, Year 2016*

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this is a consequence of the general tendency to reduce the rate of inpatient hospital admissions. On the other hand, the percentage of mobility out of total admissions shows constant growth, and even increases further beginning in 2011, in exact correspondence with the deployment of actions to contain public healthcare spending.

It is therefore clear that critical issues relating to the NHS' ability to provide services are present and in play, and are unevenly distributed among the various Regions.

It is not surprising in this regard to observe in Figure 10 how the Regions that are or have been subject to debt rescheduling are also those with mobility shortfalls.

Italian patients in these regions are therefore increasingly encouraged to seek treatment outside their own territory, and have an evident tendency to seek out those regional healthcare systems that maintain greater margins of effectiveness and efficiency.

As regards the opinions of citizens, we will limit ourselves here to mentioning the Censis-Rbm survey given in June 2017, according to which over 20% of Italians (about 12.2 million citizens) in 2016 postponed or did without healthcare services (1.2 million more than in 2012). Of these, 18% are citizens of the North-West, 15% of the North-East, 39% of Central Italy and 28% of the South and Islands, with the number of elderly people involved being 2.4 million.

This data requires in-depth analysis and may probably be interpreted in a not necessarily dramatic way, even as relates to the type of services that went unused, but nevertheless remains a sure sign of growing malaise.

6. What future?

The difficulties and critical issues that we have systematically highlighted up to now must obviously be reported within a more general socio-economic context, as they are the result of many long-term factors which lay outside the scope of this report to assess.

Instead, it is a good thing to recall how, given the generally uneasy situation in the country, the Italian healthcare system as a whole can legitimately boast of some significant results, ranging from the widespread high level of professional quality to acknowledged scientific productivity and, above all, the ability to maintain a reasonable level of universal coverage despite everything, albeit one that is achieved with a great degree of patient mobility among its facilities.

Nevertheless, there is an undeniable trend towards the reduction of resources, along with the unresolved problems relating to the governance of the regional health systems and the network of public hospital centers.

What does this bode for the future?

The answers to questions of this type can only be multiple, because they are derived from which healthcare policy choices will be made on some fundamental aspects, which we have tried to exemplify in Figure 11.

The first of these inevitably concerns the resources employed beginning with public healthcare spending.

It is obvious that a clear trend reversal, bringing it back to values above 7% of GDP in the coming years, would paint an optimistic scenario with qualitative-quantitative increases in services.

We can only hope that this is our future.

But if it is not so?

In this instance the question differs according to whether the perception of the growing difficulty of the regional healthcare systems leads to bolstering the present healthcare spending of 6.7% of GDP, or if the decrease of up to 6.3% envisaged by the preliminary spending request (DEF) is set to become a reality, or even the drastic reduction set out by the more radical spending review indicated in the Cottarelli Report.

The stabilization of current spending levels could lead to substantial system buoyancy, with qualitative and quantitative levels corresponding to the current ones, but inevitably excluding much of the innovation that might be generated in the coming years from the provision of services.

It is likely that a situation of this type will lead over time to a certain increase in either out-of-pocket or intermediated private spending, with a clear stratification among the population segments and the territories with greater financial resources.

A drastic progressive decrease in public healthcare spending would instead open up very different and innovative scenarios, depending upon the healthcare policy lines adopted.

We have imagined two possible scenarios of this in a very simplified manner, the first of which depicts the stability achieved by additional financial resources and the second, the permanent erosion of the system.

The first of these include the use of precise and conscious structural regulatory interventions, aimed at finding additional resources.

Generally speaking, there are two possible approaches. The first of these, which substantially follows the original Beveridge model of the NHS, features the use of initiatives to expand the degree of cost sharing while retaining the current financing model.

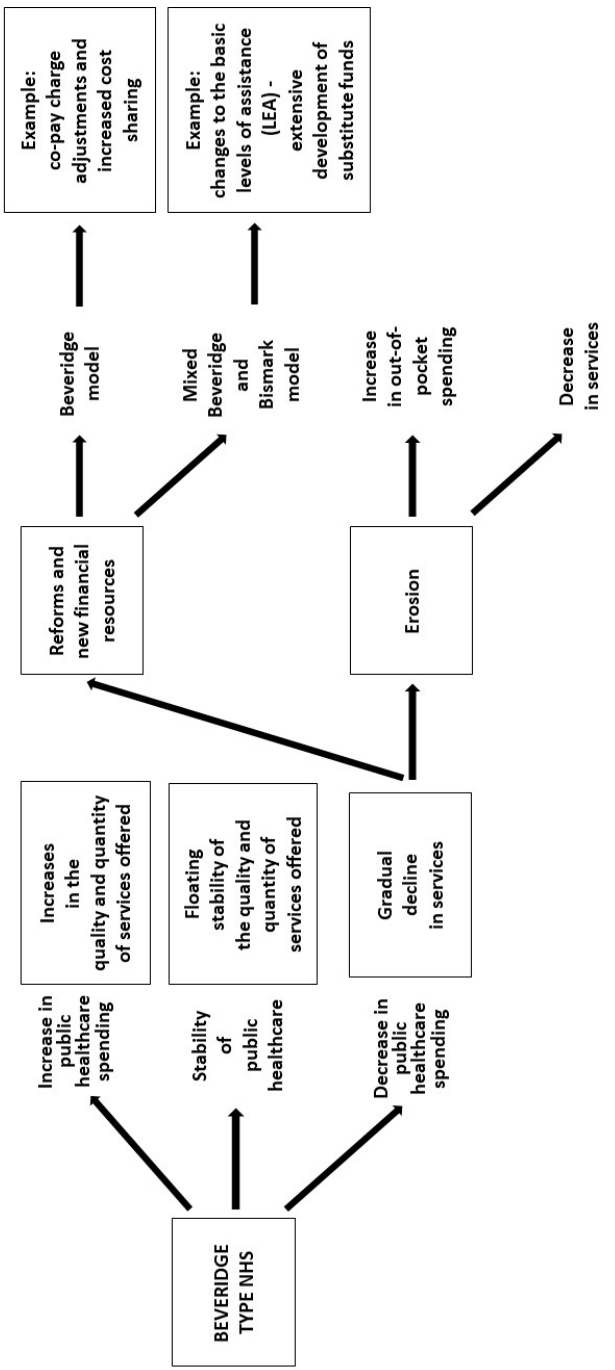

Fig. 11 - Future scenarios

The simplest example of this might focus strongly on co-payments, limiting exemption for certain illnesses to the only the lowest income brackets. We should also recall that in the past, even sharper measures were envisaged for this, such as extending co-payment charges to hospital services or the introduction of specific taxes to support different types of services. We will not discuss the obviously extreme unpopularity of these measures, that was widely experienced in the past.

The second approach acts more radically on the Beveridge model, introducing Bismarck-type elements to achieve an extremely innovative and rarely seen type of healthcare system.

Taking this approach entails knocking down the wall of the universal coverage guaranteed by the NHS by decreasing the basic levels of assistance (LEA), which, for social reasons could be limited to those population groups able to cover the shortfall with collective insurance instruments.

Such an approach might not be in contrast to constitutional requirements.

An approach of this kind would undoubtedly require decisive regulatory intervention but, above all, a broad level of social consensus, especially in the working world and among its trade union and employer representatives.

Such a transition is, at first sight, unsavory, but perhaps not altogether unattractive, especially in light of the potentially more active and responsible role by all the parties involved in the productive sectors.

And in this sense it is worth mentioning that this scenario opens up prospects for institutional solutions in government healthcare that, for example, in Germany have proved to be very solid and functional, and that see the role of regulators being solidly represented by trade unions, employers' organizations and territories.

All the solutions that we have briefly mentioned above require, we repeat, an explicit and strong vision of reform, to achieve consistent and effective organizational systems.

And if this does not happen?

In the event of a gradual decrease in public spending without compensatory solutions, we can only expect a corresponding erosion of the healthcare and social assistance system, probably further aggravated by increasing territorial disparities and serious lapses in universal coverage and equity.

This scenario would inevitably lead to an uncontrolled increase in out-of-pocket spending, a general decline in services and great social suffering.

7. AIOP's position

In the uncertain future that we have described, the presence in Italy of a large network of private hospital providers represents, as we have already mentioned, a significant advantage for the NHS, a valuable opportunity to provide services with high levels of efficiency, and a reserve of service operations in the event of production crises in the publicly managed sector.

All of this is a lot but it is not enough, because without the adoption of adequate healthcare policies, the AIOP network, even integrated with other private hospital operators, will not be enough to guarantee universal care services alone.

But a further important advantage for the Italian healthcare system generated by this presence is the unquestioned ability of this network of hospital centers to adapt to the evolution of organizational models, changing their internal organization and maintaining, within reasonable limits, the ability to invest in change. This flexibility, which results from the plurality of service providers within our National Health Service, even among conflicts, represents a value for the whole country.

The hope, which future difficulties make even more pressing, is that this value is increasingly recognized by the national and regional Governments, whose duty it is to guarantee the health of the citizens.

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Introduction

Last year's *Health & Hospitals* Report highlighted *the type of streamlining process* that has invested the Italian public health system over the last five years: limiting spending, not adequately addressing the inefficiencies of the "machine", transferring as much as possible the action of the spending review on funding granted to accredited private parties and giving rise to a *de facto* rationing of the services provided to users.

And it is precisely on the progressive "strain" of the latter that *the active reaction strategies* of patients and their families have gradually concentrated. This is the topic to which the *2017 Health & Hospitals* Report directs its attention.

When access to services becomes a lengthier, more difficult and more expensive prospect and, at the same time, these services are (or are perceived as) inadequate, reactive behaviors become inevitable and tend to take the most diverse forms (more or less obvious and, sometimes, even improper).

This wear and tear of services has become increasingly pronounced over time and this is further evidenced by the trend of several phenomena that were the subject of the questions expressly asked of caregivers, for example[1]:

- the growing dissatisfaction with the health system in the home Region (which was true for 21.3% of respondents in 2015, rising to 32.2% in 2017, and even 51.3% in the South);
- the difficulty of finding reliable information when choosing the most suitable hospital for the patient (true for 29.7% of respondents in 2014, and 38.2% in 2017, and was stated as true by 48.9% of respondents residing in the South);
- the slight and/or lack of feeling of "being placed at the center" as patients (a feeling that increased from 19.3% in 2014 to 32.4% in 2017, and was 41.3% for caregivers in the South);

[1] See Part One/Table 14, pp. 76-77.

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– the inadequate link between the phase of hospital discharge and that of access to social assistance-post-hospitalization services such as rehabilitation or long-term care facilities, R.S.A. (assisted living homes), and home care services (this lack of continuity of care was true for 18.1% in 2014 and 21.2% in 2017, though it was even more pronounced in the South, at 28.5%);
– the repeated postponing and/or foregoing of care by people who needed it in the last year, which affected 26.8% of Italian families in 2017, with 20% of these having already experienced postponements and/or foregoing of care in 2016, with a further 16.5% of the same having faced similar problems in 2015 (due to economic difficulties, excessively long waiting lists, bureaucratic problems with access or a rationing of services).

To deal with the problems that have gradually accumulated (and worsened), especially in the last 6-7 years, a set of reaction strategies have been enacted by patients and their families, these may include[2]:

– recourse to accredited private hospitals or paid private clinics, as an alternative to public facilities (41% in the first case and 20% in the second case), most especially given the reduced waiting time for services and greater trust in the accredited hospital and doctors that work there;
– the use of hospitals in Regions other than the one in which they live: caregivers who have done so and/or are steadfastly oriented to doing so or to take it into consideration in case of need rose from 28.2% in 2016 to 47.7% in 2017, with reasons correlated to the higher quality of hospital services, the presence of trusted medical personnel and specializations that do not exist in the regional facilities, as well as due to excessively long waiting lists;
– making use of accredited private hospitals as an alternative to public ones, awareness of the ability to do so without additional burdens for users having gradually increased (from 35.5% in 2009 to 39.3% in 2017), turning to hospitals located outside the home Region (by 31% -32% of the citizens interviewed) or even by seeking healthcare and hospital services at facilities in other countries of the European Union (increased from 14.1% in 2013 to 18.5% in 2017).

Alongside the strategies mentioned above we should also mention the (often improper) use of the Emergency Room by citizens as an alternative way to access hospital services, so much so in fact that the people say (in 26.8%

[2] See Part One/Table 15, gg. 84-84.

of cases) that they prefer to use this "shortcut" if waiting lists for specialist visits or for diagnostic tests or admissions are too long[3].

Finally, a fundamental strategy employed (and easy if one has adequate resources) that needs to be mentioned, is that of out-of-pocket spending by Italian families. This expenditure has increased by 22.4% over the last 10 years, while total public health expenditure has risen by only 14.2% at current prices[4]. Furthermore, 77.4% of the caregivers expressly surveyed on this topic admit to having paid the healthcare and/or assistance expenses for themselves and/or other family members over the last twelve months, despite having had access to the services of public facilities or those of accredited private facilities.

In the area of healthcare, families had to invest EUR 7.6 billion specifically for co-pay charges and other various forms of cost sharing, in order to access the services provided by public facilities[5]. This amount, however, actually ends up increasing the public health expenditure of 6.7% compared to that financed through the National Health Fund. The result is that, by way of example, the EUR 113.7 billion total public health expenditure in 2016 would rise to EUR 121.3 billion if the co-pay charges and cost-sharing expenses paid by users were included.

The capacity of the public hospital system to deal with its inefficiencies is still largely an issue that has not been adequately resolved (as is also attested to by an examination of the Hospital Centers' Financial Statements this year). This examination highlighted some specific "anomalies", if we compare the trend of some items over the last four years, followed by an in-depth analysis, in particular, of the so-called "by function" activities, which – alone – frequently account for upwards of 40% of Hospital Production Revenues + co-pay charges, but often amount to 50% and, sometimes, to 60% or more. The examination of the "by function" activities made it possible to estimate the extra-revenues derived from them, which may include implicit forms of partial or total budget coverage. These extra-revenues can be assessed (for Hospital Centers and directly managed Hospitals) as a figure that falls within a "differentiation" ranging between 3.2 and 4.1 billion euros, an amount that affects between 6.0% and 7.5% of the total expenditure of public hospitals[6].

[3] See Part One/Table 15, pp. 83-84.
[4] See Part One/Table 11, p. 67.
[5] See Part One/Table 12, pp. 71-71 e Table 13, p. 73.
[6] See Part One/Section 4.1, p. 105 et seq.

All of the considerations set out to this point make it possible to state that the Healthcare Agreement based on the principles of universality and inclusiveness, which we have enjoyed for almost forty years, is now significantly weakened and indeed is at risk of a serious breakdown, given that the reactive strategies implemented by users are certainly not enough to compensate for the growing weaknesses of the current National Health Service, which, moreover, have accumulated over time with an increasingly evident overwhelming amount of inconveniences.

The truth is that the time has come to attempt a (shared) transition to a New-Healthcare Agreement, while at present we are limited to intertwining the *de facto* deterioration/rationing of services with the reactive behaviors that users are able to put in place.

In reality, we should take note of the situation and recognize the existence of a "gap" that cannot be bridged between the inevitable increase in current and future coverage needs (due to the aging of the population, technological and pharmacological innovations, and the increased expectations of citizens) and the need to increase (and continue to increase) the relative public expenditure in a consistent manner. This brings us then to set forth an inevitable redesign scenario in order to more stably balance needs, on the one hand, and public resources, on the other, as has already happened with the pension system, which has had to overcome the old "remunerative" approach and, at the same time, adapt calculation mechanisms to fit the rise in people's life expectancy.

All of this will therefore require rethinking our health and social welfare system which:

- on the one hand, should (hopefully) retain its universal and inclusive nature as much as possible for the most serious and dire needs, even if it will not be possible to completely cover them (beginning with, though not limited to, those lacking self-sufficiency);
- and on the other hand, introduces a "responsibility commitment" for all of the parties involved, without exception: public system, insurance system, corporate representation system, workers' representation system, individual citizens and families.

The adoption of this responsibility commitment is essential for the gradual construction of a New-Healthcare Agreement that must be held together by a three-fold bond.

The first of these is that which must tie public funding to the responsibility of the healthcare "machine" to undertake an in-depth restructuring and reorganization. Cost cutting alone is not enough, as has also clearly emerged from the experiences with debt rescheduling plans and commissioners,

which have led to a deterioration and a rationing of services for patients. But this first bond also implies having full and detailed transparency of the financial statements as well as the levels of effectiveness of the care activities (by number and quality of services provided) so as to "free up" some additional resources to invest in innovation, restructuring/reorganization, and the incorporation of new personnel.

The second bond concerns the linking of healthcare and assistance services which may be put off no longer. This entails the creation of an effective "system of connections" both upon access to and departure from of facilities and services: this may no longer be put off, as has been further evidenced in particular by the caregiver survey carried out specifically for this Report.

The third bond concerns the necessarily more well-structured and fluid nature of social assistance compared to the uniformity and rigidity of the forms that we have experienced up to now as a result of the old Agreement between the State, corporations and citizens. It is now time for the responsibility commitment to be distributed among the various parties, since "we cannot give everything to everyone" and the relationship between these parties that must (needs to) occur should be re-envisaged, bearing in mind:

- what the public sector can and should continue to do;
- what the individual citizen and the family can and should do;
- what the insurance system can and should do;
- what corporations (corporate welfare included) can and should do;
- what the associative representation system can and should do;
- what the EU social assistance network can and should do.

At present we are faced with a moving picture, but one that is still very fragmented and disengaged from dialog. Yet it is becoming increasingly important to reorder the responsibilities, roles and resources of the various parties, while avoiding solutions that are as extreme as they are unworkable in their conception such as, on the one hand the nostalgia for "old-fashioned social assistance" and, on the other hand, the aspiration for "completely privatized social assistance".

If we have sufficient capacity and vision to work in this direction, it may also make sense to re-propose the theme of public funding that is more appropriate than that which currently exists, and that is able to balance the needs of those who demand protection for healthcare and social assistance and the ability of the system to offer adequate services.

What is certain is that we will have to undergo a period of overhauling not just the social assistance system, but also our entire way of living together, requiring us to interpret positively the great "changes" in progress and get over our regret for what no longer exists, as well as our fear of what does not yet exist.

In conclusion, it may be useful to recall what Britain's House of Lords recently stated in a paper on the topic of the long-term sustainability of the National Health Service and the social protection of people, addressed to the current Government and those that will come after[7].

The key issues addressed actually speak also to the situation in Italy, since they emphasize the need:

- to overcome the short-term culture that is reflected in the Department of Health, with its incapacity or unwillingness to think beyond the next few years: while political consensus is needed on the long-term future of health and the social protection system that requires an extensive national debate on the issue, adopting a perspective that must cover the next 15-20 years;
- to transform the services radically so as to also incorporate long-term planning, widescale public consultation, appropriate systems of governance and evaluation, while also promoting a clear and irreversible integration between healthcare services and social assistance services;
- to establish that public funding for health and assistance must grow in line with the growth of the Gross Domestic Product beginning in 2020, while the financing of both should be transferred to the Department of Health, that shall instead be called the Department of Health and Care, integrating their relative budgets;
- and finally, to consider – as the Government – the introduction of an insurance scheme that can be adopted upon reaching adulthood, in order to contribute to the coverage of social assistance costs: it should be reiterated that it is important to reaffirm the principle that access to health and social services entails both the responsibilities of patients and the respect of their rights and, indeed, the principles on which the National Health Service is based must be re-evaluated, reasserting the responsibility of individuals, and also undertaking to inform and educate citizens about the true costs of non-prevention for the National Health Service.

We are facing a profound transformation of our way of producing wealth and also of how we live our lives together. We need adequate, reasonable and fair answers that must be based on a responsibility that is shared (and not opposed) by the people and the elite.

Nadio Delai
President of Ermeneia – Studi & Strategie di Sistema

[7] House of Lords – Select Committee on the Long-Term Sustainability of the NHS, "Report of Session 2016-2017", London 5 April 2017.

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Part One

The formation of a reaction strategy by users to cope with the decline in services

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1. The enduring capacity, in spite of everything, of a system to be preserved

1.1. Intrinsic strength, even with limited resources

The identification of the weaknesses of Italy's National Health Service, set forth each year in this Report along with its relative strengths, should not lead us to forget that the average performance levels of this system contribute to its decidedly good standing compared to other national healthcare systems. And this is true despite its being immersed in a process restricting the available financial and professional resources that, consequentially, impoverishes and, above all, creates differences within the system that translate into unequal conditions in terms of access to treatment and the quality of the treatment in, and even within, different territories.

It must also be emphasized specifically for the hospital environment, that we are dealing with a mixed public/accredited private hospital system that, as a whole, accounts for the total number of available services enjoyed by citizens: it is a "two-legged" public service, if one bears in mind that the accredited private hospital system provides 28.3% of in-hospital days and accounts for 13.6% of the total hospital spending.

The specific features of the mixed public/accredited private system that exists in Italy need to be understood in their complexity before looking at the facilities operating within that system.

First of all, its public facilities include hospital centers, hospitals directly managed by local health authorities, and hospital centers integrated with universities; the whole of which accounts for the greater part of current state hospital expenditures (about 76%). In addition to these are other facilities, namely public university polyclinics that are not affiliated with hospitals, public Institutes for Treatment and Research (IRCCS) and Public Foundations, USL Facilities and research agencies, which together account for another 10% of current public hospital expenditures.

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The above facilities are augmented by accredited healthcare facilities, private university polyclinics, private IRCCS and religiously-affiliated classified hospitals. These make up the remaining 14% of the current National Health System hospital expenditures.

In 2014 (latest available data), there were a total of 197,091 patient beds, 70.2% (138,377 units) of which were located in public hospital centers and 29.8% (58,714 units) of which were located in accredited private hospitals (Figure 1). Comparing the two groups of patient beds provides an understanding of how the system effectively embodies all the features of a mixed organization that is predominantly public but also has a quite large private component, as was recognized by Legislative Decree 502/1992.

Public and accredited private hospital facilities total 1,056 (2014), with the latter being greater in number (56.0%) than the former (44.0%). Public hospitals are slightly more concentrated in the Center-North (53.6%), while accredited private hospitals are found more in the Center-South (59.1%), as shown in the second part of Figure 1.

But a comparison (2014) between the number of hospitals and the number of patient beds reveals more detailed information:

Geographical distributions	*Public hospitals*			*Accredited private hospitals*		
	No. of hospitals	*No. of patient beds*	*Patient beds* / *No. of hospitals*	*No. of hospitals*	*No. of patient beds*	*Patient beds* / *No. of hospitals*
North	151	71,778	475	242	27,809	115
Center	98	25,532	261	125	12,640	101
South	216	41,067	190	224	18,265	82
Total	465	138,377	298	591	58,714	99

Figure 2 depicts aspects relating to in-hospital stay flows and spending flows for the year 2015 (latest available data).

In-hospital days were 61.1 million for the year 2015 compared to 61.8 in 2014 (-1.0%), 62.9 in 2013, 65.2 in 2012, and 67.9 in 2011: which represents an overall decrease of 10.0% in 2011 and in 2015.

Again, in 2015 71.7% of these days were in public hospitals and the remaining 28.3% were in accredited private hospitals as a whole.

The geographical distribution of in-hospital days, based on the type of facility, is the following:

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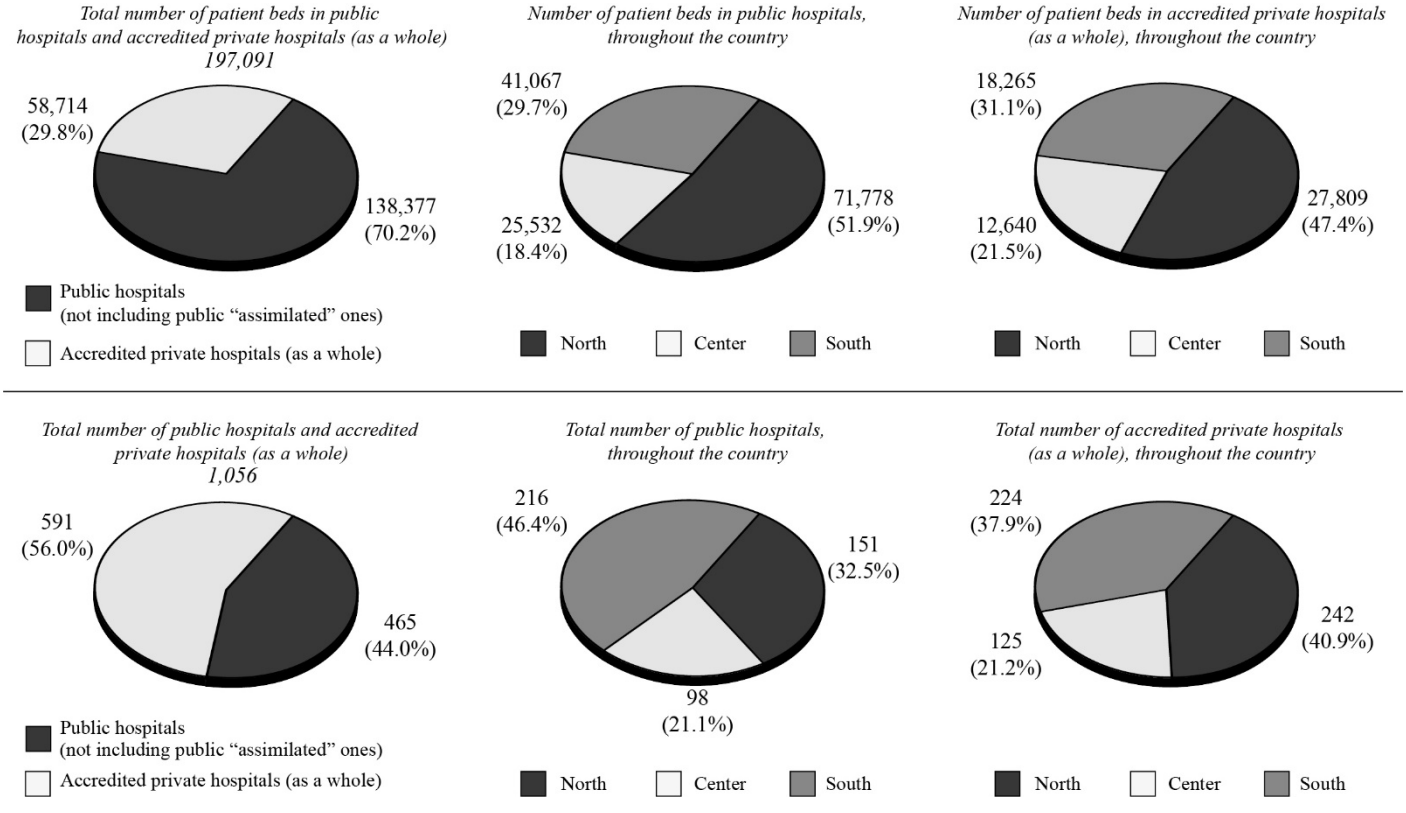
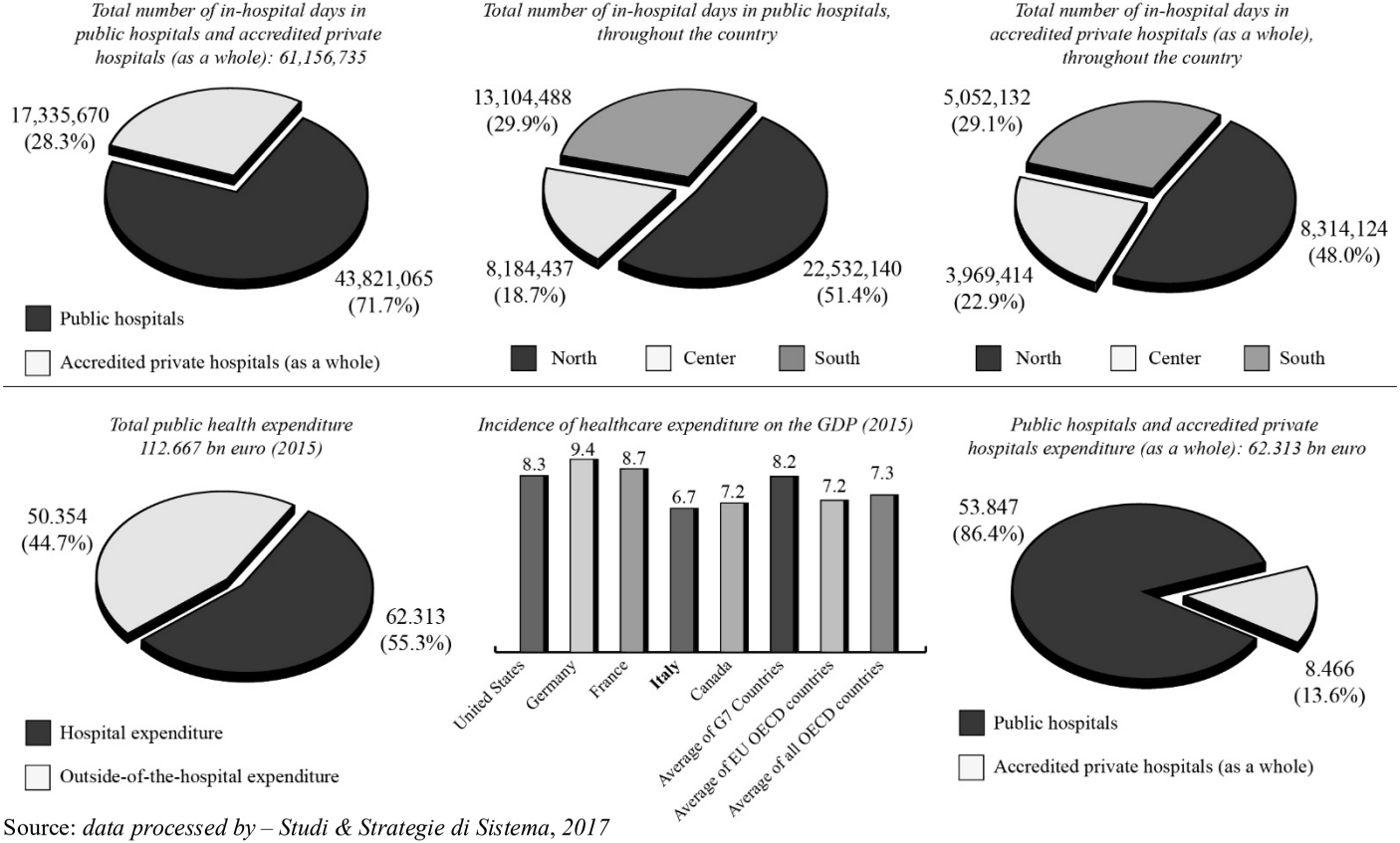
Fig. 1 - Executive summary of the aggregates of the Italian hospital system: patient beds and institutions (2014)



Source: *data processed by Ermeneia – Studi & Strategie di Sistema, 2017*

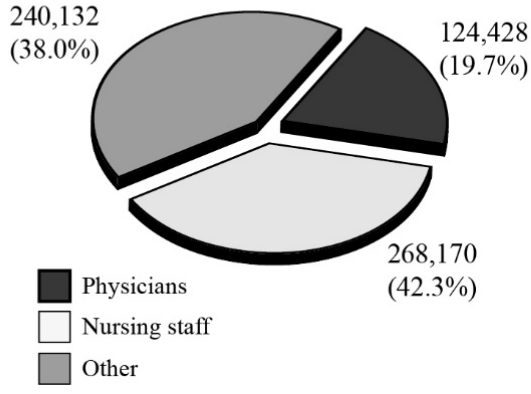
Fig. 2 - Executive summary of the aggregates of the Italian hospital system: in-hospital days and expenses (2015)



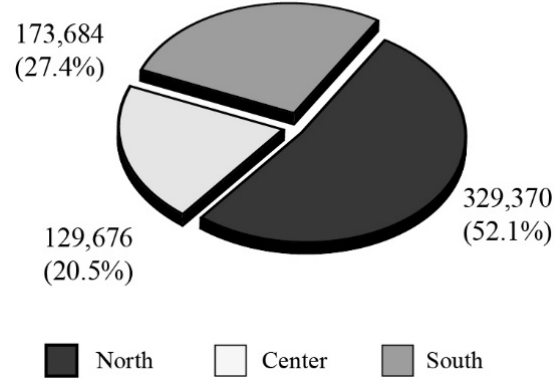
Source: *data processed by – Studi & Strategie di Sistema, 2017*

Fig. 3 - Summary of the aggregates of the Italian hospital system: total employees (2013)

Total number of the professionals in public hospitals and accredited private hospitals (as a whole): 632,730



The distribution of total professionals, throughout the country



Source: *data processed by Ermeneia – Studi & Strategie di Sistema, 2017*

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Geographical distributions	*No. of in-hospital days in public hospitals*				*No. of in-hospital days in accredited private hospitals*			
	In millions		*%*		*In millions*		*%*	
	2014	*2015*	*2014*	*2015*	*2014*	*2015*	*2014*	*2015*
North	23.2	22.5	52.4	51.4	8.1	8.3	46.6	48.0
Center	8.0	8.2	18.0	18.7	4.0	4.0	22.9	22.9
South	13.2	13.1	29.6	29.9	5.3	5.1	30.5	29.1
Total	44.4	43.8	100.0	100.0	17.4	17.4	100.0	100.0

It should also be pointed out that the number of in-hospital days continued to decrease in 2015 compared to 2014 (-1.0%) and in accredited hospitals (-0.6%).

If we look instead to the flow of resources (see the second part of Figure 2) it is possible to advance the following considerations:

a) the division of total public health expenditure (112.667 billion euros in 2015) proves – as usual – to be more focused on the hospital component (55.3%) than outside the hospital (44.7%): the incidence of hospital expenditure on the total (based on estimates) increased in 2015 compared to the past, as it was 54.5% in 2011, 54.3% in 2012, down to 54.2% in 2013 and up again to 54.3% in 2014;
b) the percent of public health expenditure to the national GDP places Italy in the lowest position (6.7% in 2015) compared to the average of the G7 countries (8.2%), the average of European OECD countries (7.2%) and the total of OECD countries (7.3%). But we should also mention that our country remains 2.7 points below the incidence of public health spending to GDP in Germany and 2.0 points that of France. It should also be pointed out that compared to the previous year (6.8%) Italy decreases to 6.7% (which also appears to be falling steadily, given that it was 7.2% in 2010, 7.0% in 2011, 6.9% in 2012 and 6.8% in 2013 and 2014). And this happened in the presence of a reduction of the GDP until 2013.
   This shows how Italy invests much less public resources than the other partners in the OECD area (both by percentage and according to the level of GDP), yet retaining a universal and inclusive system albeit one in progressive deterioration as is pointed out in Section 3 of Part One;
c) the total public hospital expenditure (62.313 billion euros in 2015) breaks down to 86.4% for public institutions and 13.6% or the accredited private sector as a whole: these shares were 14.4% in 2011, down to 13.6% in 2013, and they slightly increased to 13.8% in 2014, and subsequently reduced to 13.6% in 2015, with a declining trend in the accredited component compared to the public component. But if one looks specifically at private hospitals (accredited healthcare facilities), the relevant percentage

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on total public hospital expenditure keeps dropping from 7.3% in 2010-2011, to 7.2% in 2012, to 7.0% in 2013 and 2014, finally to 6.9% in 2015.

This last observation serves to remind us that, when comparing the incidence of spending devoted to accredited private institutions as a whole (13.6% in 2015) with the incidence of hospital stays provided by the same private institutions (28.3% of the total) one cannot help but see how the accredited component of the current mixed system plays an important role, offering virtually twice the services compared to the expense, while effectively operating with lower costs (which are also decreasing over time). Not to mention that a comparison between the level of complexity of the services provided by the public and, in particular, from accredited healthcare facilities, shows an average increase by the entire hospital system, but with a positioning which often proves better for the accredited healthcare facilities compared to public facilities.

Finally, Figure 3 provides an overall idea of all the human resources that conduct their activities within the mixed hospital system. In 2013 there were 632,730 units (latest data available), showing a -2.1% reduction compared to the year 2010. Of this, 19.7% is made up of physicians (124,428 units), 42.3% is made up of nursing staff (268,170 units) and finally, 38.0% comprises the remaining personnel (240,132 units).

The distribution of personnel throughout the country shows the weight of hospital activities in the Central-North, corresponding to 72.6% of professional resources employed (52.1% in the North + 20.5% in Central Italy), to which the South is added with 27.4% of the total.

1.2. Confirmation of average quality, as attested to by performance indicators

Beyond possible breakdowns, which it is fair to account for and for which we must work to improve the current situation, public and accredited private facilities, nevertheless, succeed in providing services which are on average at a good level, despite the differences between the most qualified and efficient hospitals and less qualified and less efficient hospitals (and this is not only when comparing the North and the South of Italy, but also different hospitals within the individual Regions).

A measurement of the average levels of hospital services for the individual Regions can be made based on two fundamental indicators: that of the *average weight* and that of the *case-mix*.

If we consider the first of the two indicators, namely that of the *average weight*[1] we can compare the services of public institutions to those of private hospitals (accredited healthcare facilities), which shows that (Table 1):

a) the national average indicator of public institutions and accredited private hospitals steadily increased over the period from 2012 to 2015: for public institutions it went from1.18 in 2012 to1.21 in 2015 and for the latter group from 1.25 to 1.32 in the same period. But we must also add that, since 2016 data is available for AIOP accredited private hospitals, there was a net recovery of the *average weight* indicator, that went from 1.32 in 2015 to 1.35 in 2016;
b) it should also be noted that the indicator appears to get better, year by year, when it refers to AIOP accredited healthcare facilities compared to public hospitals (with an acceleration in 2013 and in 2015). This confirms that the highest level of complexity does not necessarily belong to public hospitals, as there are accredited private facilities that are equally or even more valuable than public facilities in the territory;
c) then, if we look at the 2015 indicators Region by Region, we can see that the entities that manage to find a place in the public sector above the national *average weight* indicator (1.21) are, in descending order:

[1] The *average weight* is a synthetic indicator of the level of complexity of the illnesses (cases) treated. It is an average of the relative weights assigned to each group of patients (DRG), weighted with the corresponding discharge numbers. The calculation formula used is the following:

$$\text{Average weight} = \frac{\left[\sum_{g=1}^{579}\left(a_g N_{gh}\right)\right]}{\sum_{g=1}^{579} N_{gh}}$$

where: a_g = specific relative weight of each DRG;
N_{gh} = number of discharged patients for the DRG in a single healthcare facility or in a group of facilities.

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Table 1 – The quality of services measured by average weight. 2012-2016

Regions	*Public institutions*				*AIOP Private hospitals (accredited healthcare facilities)*				
	2012	*2013*	*2014*	*2015*	*2012*	*2013*	*2014*	*2015*	*2016*
– Piedmont	1.28	1.29	1.29	1.30	1.59	1.58	1.61	1.65	1.64
– Lombardy	1.22	1.18	1.19	1.21	1.45	1.47	1.49	1.55	1.55
– A.P. of Bolzano	1.08	1.09	1.09	1.10	0.88	0.86	0.80	0.78	0.78
– A.P. of Trento	1.17	1.19	1.18	1.19	0.78	0.99	0.97	0.97	1.02
– Veneto[(a)]	1.21	1.21	1.23	1.26	1.26	1.35	1.37	1.42	1.44
– Friuli Venezia Giulia	1.23	1.23	1.25	1.26	1.10	1.21	1.26	1.30	1.27
– Liguria	1.22	1.25	1.26	1.27	2.61	2.60	2.64	2.80	2.82
– Emilia Romagna	1.21	1.21	1.22	1.22	1.32	1.34	1.33	1.34	1.36
– Tuscany	1.29	1.30	1.31	1.34	1.49	1.56	1.59	1.69	1.71
– Umbria	1.18	1.19	1.20	1.21	1.16	1.18	1.30	1.43	1.61
– Marche	1.22	1.24	1.24	1.24	1.15	1.26	1.26	1.30	1.28
– Lazio	1.19	1.21	1.22	1.23	1.08	1.10	1.11	1.19	1.32
– Abruzzo	1.12	1.14	1.15	1.18	1.27	1.29	1.28	1.29	1.31
– Molise	1.16	1.03	1.04	1.05	1.08	1.13	1.32	1.19	1.47
– Campania	1.14	1.17	1.17	1.18	1.03	1.04	1.02	1.05	1.07
– Apulia	1.08	1.06	1.08	1.09	1.44	1.54	1.44	1.50	1.50
– Basilicata	1.20	1.22	1.20	1.22	-	-	-	-	-
– Calabria	1.04	1.05	1.07	1.09	1.04	1.31	1.26	1.42	1.44
– Sicily	1.13	1.15	1.15	1.16	1.18	1.20	1.16	1.12	1.19
– Sardinia	1.08	1.09	1.11	1.13	0.84	0.85	0.86	0.88	1.19
Italy	*1.18*	*1.19*	*1.20*	*1.21*	*1.25*	*1.29*	*1.28*	*1.32*	*1.35*

All indicator values are aligned to CMS DRG version 24.0 used by the Ministry of Health since 2009. This version consists of 538 DRGs and refers to the 2007 International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) for the classification of diseases, injuries, surgeries, diagnostic and therapeutic procedures.

(a) The public institutions in Veneto also include 4 private hospitals (accredited healthcare facilities) associated with AIOP and under the control of USL facilities.

(b) The high average weight is due to the presence of two accredited healthcare facilities, largely devoted to extremely specialized treatment.

Source: *data processed by Ermeneia – Studi & Strategie di Sistema based on the Ministry of Health and AIOP data*

- Tuscany (1.34);
- Piedmont (1.30);
- Liguria (1.27);
- Veneto and Friuli Venezia Giulia (1.26 for both);
- Marche (1.24);
- Lazio (1.23);
- and Emilia Romagna (1.22).

We can also see that the *average weight* indicators of all the southern regions are quite different from the national average of 1.21, except Basilicata (1.22). Likewise, the *average weight* index exceeds the national average of 1.32 in 2015, for accredited hospitals in the following regions, again in descending order:

- Liguria (2.80);
- Toscana (1.69);
- Piedmont (1.65);
- Lombardy (1.55);
- Umbria (1.43);
- Veneto (1.42) and Calabria too (1.42);
- Emilia Romagna (1.34).

As can be seen in as many as 9 regions the national *average weight* indicator is exceeded both in the world of accredited facilities and public ones. However, in as many as 5 regions (Piedmont, Veneto, Liguria, Emilia Romagna and Tuscany) the relevant national average is exceeded both in public facilities and accredited ones: confirming the fact that a good territorial setting is capable of generating more overall quality in both types of facilities. Finally, the *average weight* indicator is generally lower in southern regions both in public (except Basilicata) and in accredited private sectors (with the exception of Apulia and Calabria);

d) furthermore, in almost all regions the *average weight* indicator for the year 2015 is higher for accredited private hospitals than for public hospitals, except in the case of the two autonomous provinces of Trento and Bolzano (where the private sector is, however, marginal), as well as in Lazio, Campania, Sicily and Sardinia;
e) and, finally, higher average weight indicators are typical of the Regions of Central and Northern Italy for both public institutions and private accredited ones.

At this point, the level of complexity of services can also be measured by the second type of indicator – as previously mentioned – that of the so-called

case mix[2]. The values in Table 2 permit the following considerations to be made:

a) this indicator is relatively stable for both types of facilities, decreasing slightly for public institutions (from 1.00 in 2012 to 0.98 in 2013, 2014 and 2015), and then 1.08 in 2012, down to 1.07 in 2013 and to 1.05 in 2014, then rising again to 1.09 in 2015, as far as AIOP facilities are concerned;
b) the national *case-mix* indicator for accredited private hospitals appears permanently higher than that of the public institutions in all cases, as can be seen by comparing the data of the last line in Table 2;
c) the regional health authorities that exceed the national average (0.98 in 2015) with respect to public institutions are (in descending order):
   - Tuscany (1.08);
   - Piedmont (1.05);
   - Veneto, Friuli Venezia Giulia and Liguria (1.02);
   - Marche and Lazio (1.00 for both);
   - Emilia Romagna and Basilicata (0.99 for both);
   - Molise (0.96).

[2] The case-mix index constitutes a second synthetic (more detailed) indicator of the complexity level of illnesses treated. It expresses the complexity of the cases treated by a department, a hospital or a unit, compared to the complexity of the case for the entire regional or national hospital system. Case mix levels greater than 1 are associated with a complexity higher than the average for the system in question. The calculation formula used is the following:

$$\text{Case mix index} = \frac{\left[\sum_{g=1}^{579}\left(a_g N_{gh}\right)\right] : \sum_{g=1}^{579} N_{gh}}{\left[\sum_{g=1}^{579}\left(a_g N_{gr}\right)\right] : \sum_{g=1}^{579} N_{gr}}$$

where: ag = specific relative weight of each DRG;
Ngh = number of discharged patients for the DRG in a single healthcare facility or in a group of facilities;
Ngr = number of discharged patients for the DRG for the system in question (e.g. regional, national total).

Please note that the case-mix index is weighted with the complexity of cases of the entire regional hospital system, whereas the average weight index is weighted only with the number of discharges: consequently, the average weight index ends up reducing the variable scope of the indicator itself which must take account of the context.

Table 2 – Comparison of AIOP public institutions and private hospitals (accredited healthcare facilities), based on the "case-mix" of the services provided. 2012-2015

Regions	*Public institutions*				*AIOP Private hospitals (accredited healthcare facilities)*			
	2012	*2013*	*2014*	*2015*	*2012*	*2013*	*2014*	*2015*
– Piedmont	1.07	1.07	1.05	1.05	1.38	1.31	1.32	1.35
– Lombardy	1.02	0.98	0.98	0.97	1.26	1.24	1.24	1.27
– A.P. of Bolzano	0.91	0.90	0.89	0.89	0.77	0.71	0.65	0.64
– A.P. of Trento	0.98	0.99	0.97	0.96	0.68	0.82	0.80	0.79
– Veneto [(a)]	1.02	1.00	1.00	1.02	1.09	1.12	1.12	1.16
– Friuli Venezia Giulia	1.03	1.02	1.02	1.02	0.95	1.01	1.04	1.06
– Liguria [(b)]	1.03	1.03	1.03	1.02	2.24	2.15	2.16	2.30
– Emilia Romagna	1.01	1.00	1.00	0.99	1.16	1.11	1.09	1.10
– Tuscany	1.08	1.07	1.08	1.08	1.30	1.29	1.30	1.38
– Umbria	0.99	0.99	0.98	0.98	1.01	0.98	1.06	1.17
– Marche	1.02	1.02	1.02	1.00	1.00	1.04	1.03	1.07
– Lazio	1.00	1.00	1.00	1.00	0.94	0.91	0.91	0.98
– Abruzzo	0.95	0.94	0.95	0.96	1.10	1.07	1.05	1.06
– Molise	0.98	0.85	0.85	0.85	0.94	0.93	1.08	0.98
– Campania	0.96	0.97	0.96	0.95	0.89	0.86	0.84	0.86
– Apulia	0.91	0.88	0.89	0.88	1.26	1.27	1.18	1.23
– Basilicata	1.01	1.01	0.99	0.99	-	-	-	-
– Calabria	0.87	0.87	0.88	0.88	0.90	1.09	1.03	1.17
– Sicily	0.95	0.95	0.94	0.94	1.02	1.00	0.95	0.98
– Sardinia	0.91	0.90	0.91	0.91	0.73	0.70	0.70	0.72
Total	*1.00*	*0.98*	*0.98*	*0.98*	*1.08*	*1.07*	*1.05*	*1.09*

All indicator values are aligned to CMS DRG version 24.0 used by the Ministry of Health since 2009. This version consists of 538 DRGs and refers to the 2007 International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) for the classification of diseases, injuries, surgeries, diagnostic and therapeutic procedures.

(a) The public institutions in Veneto also include 4 private hospitals (accredited healthcare facilities) associated with AIOP and under the control of USL facilities.

(b) The high average weight is due to the presence of two accredited healthcare facilities, largely devoted to extremely specialized treatment.

Source: *data processed by Ermeneia – Studi & Strategie di Sistema based on the Ministry of Health and AIOP data*

The same process, applied to accredited private hospitals (again for the year 2015) sees an average national *case-mix* of 1.09, while the regions that exceed this value are, in descending order:

- Liguria (2.30);
- Tuscany (1.38);
- Piedmont (1.35);
- Lombardy (1.27);
- Apulia (1.23);
- Umbria and Calabria (1.17 for both);
- Veneto (1.16);
- and Emilia Romagna (1.10);

d) the *case-mix* higher than the national average is only found in the regions of the Center-North, however also in Abruzzo and Basilicata, regarding public hospitals, and in Apulia and Calabria, regarding AIOP private hospitals;
e) and finally the comparison between the *case-mix* index of public institutions and that of AIOP accredited private institutions almost always shows a better position for AIOP facilities, except in the case of the two Autonomous Provinces of Trento and Bolzano (as previously mentioned, the presence of these entities is however, marginal), Lazio, Campania and Sardinia.

In any case, in addition to the indicators mentioned, other indicators can be used to measure the level of complexity of services provided by the different types of hospitals. Table 3 indicates 16 highly specialized DRGs and their incidence per 1,000 discharged patients in the two types of hospital facilities considered. The comparison shows:

a) an average incidence that is slightly growing for public institutions when looking at the 2013 and 2015 values, and a substantial stability for AIOP accredited private institutions in the same period (see values in the last line of the Table mentioned);
b) a stable superiority, even making a comparison of individual DRGs in 2015 among public and AIOP accredited private facilities, of the latter is confirmed, except for DRG 110 (Major cardiovascular procedures w cc) e and the DRG 553 (Other vascular procedures w cc w major cv dx).

Another way to understand the contribution of the accredited private hospitals to the quality of the services compared to public hospitals is to compare the incidence of the complexity of the latter (classified as high, medium or low), for each individual Region, as well as to the national average and that of the individual geographical areas (Table 4). It should be mentioned that in this instance we are talking about accredited private facilities as a whole,

Table 3 – The quality of public and private hospital services, as measured by the incidence rates of extremely specialized[(a)] DRGs[(*)]

DRG	*Public institutions (Incidence per 1,000 discharged patients)*			*Private hospitals (accredited healthcare facilities) – AIOP (Incidence per 1,000 discharged patients)*		
	2013	*2014*	*2015*	*2013*	*2014*	*2015*
104 Cardiac valve & oth major cardiothoracic proc w card cath	1.019	1.061	1.116	5.645	5.273	5.620
105 Cardiac valve & oth major cardiothoracic proc w/o card cath	1.319	1.411	1.403	2.586	2.531	2.630
106 Coronary bypass w PTCA	0.023	0.026	0.027	0.317	0.181	0.172
108 Other cardiothoracic procedures	0.461	0.426	0.432	0.894	0.813	0.790
110 Major cardiovascular procedures w cc	1.407	1.346	1.345	1.233	1.113	1.147
111 Major cardiovascular procedures w/o cc	1.248	1.332	1.322	2.007	2.026	2.114
515 Cardiac defibrillator implant w/o cardiac cath	1.393	1.366	1.378	1.784	1.655	1.668
535 Cardiac defib implant w cardiac cath w ami/hf/shock	0.236	0.266	0.257	0.716	0.550	0.642
536 Cardiac defib implant w cardiac cath w/o ami/hf/shock	0.293	0.323	0.334	0.596	0.556	0.657
547 Coronary bypass w cardiac cath w major cv dx	0.132	0.135	0.142	0.236	0.231	0.229
548 Coronary bypass w cardiac cath w/o major cv dx	0.402	0.366	0.341	1.810	1.364	1.271
549 Coronary bypass w/o cardiac cath w major cv dx	0.156	0.146	0.136	0.430	0.429	0.449
550 Coronary bypass w/o cardiac cath w/o major cv dx	0.745	0.716	0.658	2.001	1.976	2.079
551 Permanent cardiac pacemaker impl w maj cv dx or aicd lead or gnrtr	1.401	1.420	1.387	1.828	1.654	1.850
552 Other permanent cardiac pacemaker implant w/o major cv dx	4.188	4.137	4.199	5.264	4.960	4.845
553 Other vascular procedures w cc w major cv dx	0.263	0.251	0.239	0.157	0.140	0.116
Mean Incidence	*22.245*	*22.697*	*23.097*	*30.946*	*28.096*	*30.941*

(*) Inpatient admissions for acute cases.

(a) Values calculated with the later CMS DRG Version 24.0 adopted by the Ministry of Health.

Source: *data processed by Ermeneia – Studi & Strategie di Sistema based on the Ministry of Health and AIOP data*

including private polyclinics, private foundations and private IRCCS, religiously-affiliated classified hospitals, USL facilities, research organizations and, finally, private hospitals (accredited healthcare facilities).

Furthermore, we have to specify that the level of complexity has been calculated on the weighted classes relative to DRGs, taking into account that this indicator refers to the resources absorbed for the production of each DRG[3].

The data shows (Table 4) how the accredited private hospitals (as a whole) account for 18.7% of high-complexity services compared to 14.4% for public hospitals. And this difference in favor of the accredited private component is even greater in the North (22.0% compared to 14.9%), though it also holds true in Central Italy (18.2% compared to 16.1%) and in the South (15.3% compared to 12.5%).

Looking at the individual Regions, accredited private facilities show a greater incidence of high-complexity services compared to public facilities, except in two cases: that of Lazio (15.7% compared to 16.1%), and that of Campania (12.3% compared to 11.1%). The last column of Table 4 shows percentage differences for high-complexity services between accredited private and public facilities: this yields a sort of indicator, in which 1.00 represents parity, values greater than 1.00 represent the advantage and those lower than 1.00 represent the disadvantage of the accredited private facilities: these facilities provide better services in the North and South compared to Central Italy.

If we consider medium complexity services (again with reference to Table 4), we can see that there is a decidedly greater incidence in this case for public hospitals compared to accredited private hospitals, except in four cases, namely in Lazio, Molise, Apulia, and Calabria, where the greater incidence is attributable to accredited private hospitals.

The incidence of low complexity services is divided fairly equally between public and accredited private hospitals as a whole.

[3] See note in Table 4.

Table 4 – Comparison of percentages of high, medium and low complexity cases of services provided to acute patients during hospitalization, in public hospitals and accredited private hospitals (as a whole), divided by Regions – 2015

Regions	Public hospitals			Accredited private hospitals			
	High complexity	Medium complexity	Low complexity	High complexity	Medium complexity	Low complexity	% High complexity – Accr. private / % High complexity – Public
Piedmont	15.9	35.0	49.2	17.9	23.4	58.7	1.13
Aosta Valley	15.5	34.2	50.2	28.8	7.9	63.2	1.85
Lombardy	14.0	31.1	54.9	22.6	31.0	46.4	1.61
Bolzano	12.8	28.1	59.1	-	23.4	76.6	-
Trento	14.5	36.0	49.5	15.5	28.3	56.2	1.07
Veneto	15.9	35.2	48.9	28.3	31.6	40.1	1.78
Friuli Venezia Giulia	15.5	34.7	49.7	22.6	24.1	53.3	1.45
Liguria	16.2	39.8	44.0	20.7	37.2	42.0	1.28
Emilia Romagna	14.2	35.8	50.1	18.1	28.1	53.8	1.27
Tuscany	17.1	39.4	43.4	33.5	24.9	41.6	1.95
Umbria	14.2	31.9	53.9	25.3	18.9	55.8	1.78
Marche	15.1	35.8	49.1	17.7	24.2	58.1	1.17
Lazio	16.1	33.4	50.5	15.7	33.5	50.9	0.97
Abruzzo	14.6	35.4	50.0	22.2	30.1	47.7	1.52
Molise	10.3	30.9	58.8	27.3	37.5	35.2	2.67
Campania	12.3	30.4	57.3	11.1	28.2	60.7	0.90
Apulia	10.7	31.9	57.4	16.0	34.6	49.4	1.49
Basilicata	14.0	37.2	48.8	31.4	32.0	36.6	2.24
Calabria	11.1	31.9	57.1	24.4	34.3	41.3	2.20
Sicily	14.4	34.6	51.0	16.9	33.5	49.6	1.18
Sardinia	11.6	32.3	56.1	13.1	16.8	70.0	1.13
North	14.9	34.0	51.1	22.0	29.9	48.2	1.48
Center	16.1	36.0	47.9	18.2	31.5	50.3	1.13
South	12.5	32.6	54.9	15.3	31.2	53.5	1.23
Italy	*14.4*	*34.0*	*51.7*	*18.7*	*30.7*	*50.6*	*1.30*

(*) The classification by classes of complexity of the DRGs currently available is that contained in the 2012 TUC Agreement, also included in the provisions of the 2016 Stability Law which excludes high-complexity services from passive mobility control measures, and subsequently extended. The TUC, however, only defines 84 high-complexity DRGs and 108 potentially inappropriate DRGs, nevertheless incorporating a setting aimed at the construction of a fee system designed to compensate inter-regional mobility. This table therefore utilizes a classification based on weight classes of DRGs, taking into account that this indicator expresses the complexity through the evaluation of the resources used for the production of each DRG: the average complexity is between the weight values of 0.9500 and 1.700 and the range of high complexity DRGs is 97% of the TUC high complexity services.
Public hospital services are provided by: Hospital Centers, University Hospital Centers and Public Polyclinics, Public IRCCS and Public Foundations, Directly-Managed Hospitals.
Accredited private hospital services are provided by: Private Polyclinics, Private IRCCS and Private Foundations, Classified Hospitals, USL Facilities, Research Entities, Private healthcare facilities.

Source: *survey by Ermeneia – Studi & Strategie based on data from Minister of Health – SDO 2015*

1.3. Confirmation of average quality, as perceived by users and citizens

The fundamental features of the Italian hospital system, based on public-accredited private facilities, has been described in the previous section by means of "objective" indicators. But it also takes into account some "subjective" indicators in the form of opinions and assessments provided by both citizens and users.

Table 5 shows, for every two years, the data collected through the *Health&Hospitals* Report from 2007 to present. These are the opinions of citizens regarding the mixed public/private hospital system that Italy enjoys. As relates to this, it should be mentioned that this situation has its roots in laws that go back to Legislative Decree 502/1992, but has more than anything become over time a mixed system that is well thought of and used by people who actively engage with it.

The data in Table 5 shows how more than 8 out of 10 respondents:

- recognize that "accredited private hospitals are part of the overall hospital system and they do not consider whether a facility is a public or accredited private one when an in-hospital stay is necessary, but rather evaluate other factors such as the presence of a specialization, the quality of services, proximity to home, etc." (85.9% agreement in 2017);
- but also suggest that "the government should make the best use of all the hospitals in the area whether they are public or accredited private facilities, in order to allow citizens the best possible choice according to their needs, opportunities and opinions" (86.6% agreement in 2017);
- and, finally, ask that "Regional and local healthcare authorities (ASL) should engage in appropriate public information campaigns to encourage free choice, given that little is currently known about the various opportunities of admissions offered by the accredited private hospitals" (77.7% consensus in 2017).

If we consider the perception of the quality of services received by users who have actually used hospital services in the last twelve months (Table 6), we can see how the average total satisfaction level ("very + quite satisfied") also in this case exceeds 80% and even goes beyond that figure. More precisely:

- the average positive opinion with regard to public hospitals was 85.9%, with even higher satisfaction among users residing in the North-West and in the Center of Italy (93.1% and 91.8%), but with a decidedly lower score for those who have had experience with hospitals in the South (75.5%)

Table 5 – The positive perception of a mixed public/private hospital system among citizens (% val.)

Phenomena	*Data*					
	2007	*2009*	*2011*	*2013*	*2015*	*2017*
"The accredited private hospital is now a part of the overall hospital system and that they do not consider whether the facility is public or private when a hospital stay is needed, but rather take into account other factors such as the necessary specialization, the quality of the services provided, the proximity to their home, and so on. ("Very + somewhat agree" opinions expressed by citizens not including "do not know" answers)"[1]	88.8	88.3	88.6	82.4	82.4	85.9
"The government should make the best use of all the hospitals in the area (public and private), in order to allow citizens the best possible choice according to their needs, opportunities and opinions ("Very + somewhat agree" opinion expressed by citizens not including "do not know" answers)"[1]	91.8	84.0	90.1	88.1	88.2	86.6
"Regions or local health authorities should invest in appropriate information campaigns to make citizens aware of their freedom to choose, since little is known about the various opportunities of admissions that accredited private hospitals offer" ("Very + somewhat agree" opinions expressed by citizens not including "do not know" answers")"[1]	86.6	84.3	80.3	77.1	79.7	77.7

(1) See Table 15/Part Two for 2017 data (not including citizens who do not express any opinions), pp. 168-169 and Table 1, p. 42 of *Health&Hospitals/2016 Report* for data associated to previous years.

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

(even if the more pronounced level of satisfaction differentiates in a more evident manner in the North compared to the South);

- the decidedly best evaluation is that for accredited private hospitals (96.2%), which is the best overall among both public and private facilities, exceeding – the already high – average percentage – for users that have used hospital facilities in the North-West (97.1%), Central Italy (97.7%), and also in the South (98.6%) (even if "very satisfied" users show a less marked diversification between North and South compared to public hospitals);
- and finally, there is the average satisfaction rating that holds 2nd place among the three hospital types shown in Table 6 and concerns paid private clinics (92.1%). This evaluation is higher for facilities in the North-West and Central Italy (95.6% and 97.8%), and is lower for those in the South (82.6%) (with a clear improvement of the higher ratings in the North-East and in Central Italy).

Thus, the average level of satisfaction among users remains high for all three facilities, though with better results for accredited private facilities and for private clinics than for public ones and certainly for hospitals operating in Central and North Italy compared to the South (except for accredited private hospitals, which are rated even more positively in this case than all the others).

Table 6 – The positive perception of the services received by actual users of hospital services used in the last twelve months, with reference to the three types of hospital facilities and geographical location (% val.)

Answers	*Total*	*Geographical location*			
		North-West	*North-East*	*Center*	*South and Islands*
Public hospitals					
– Very satisfied	19.7	22.0	27.4	20.2	10.3
– Quite satisfied	66.2	71.1	55.0	71.6	65.2
– **Very + quite satisfied**	**85.9**	**93.1**	**82.4**	**91.8**	**75.5**
Accredited private hospitals					
– Very satisfied	26.4	32.1	21.1	30.6	21.7
– Quite satisfied	69.8	65.0	70.7	67.1	76.9
– **Very + quite satisfied**	**96.2**	**97.1**	**91.8**	**97.7**	**98.6**
Private clinics					
– Very satisfied	37.3	29.8	54.4	42.3	29.2
– Quite satisfied	54.8	65.8	37.7	55.5	53.4
– **Very + Quite satisfied**	**92.1**	**95.6**	**92.1**	**97.8**	**82.6**

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

1.4. The permanent under-funding of healthcare expenditure

Thus we are dealing with a National Health Service that manages, in spite of everything, to maintain good average levels in the quality of services, as is recognized internationally and attested to in particular by objective indicators and the subjective perception among citizens and users, in relation to the hospital activity of public and accredited private facilities.

Yet public healthcare spending, as already mentioned in section 1.1 above, tends to decrease over time if measured as a percentage of GDP. This is a process that has become worse over time as a result of the impact of the long financial crisis we have experienced.

Table 7 shows how public healthcare spending for Italy was 7.2% of GDP in 2010, but fell during the negative economic cycle to 6.8% and even 6.7% in 2015: and it should be remembered – in line with the further deterioration of conditions – that the downward trend of the national GDP continued to the end of 2013.

Table 7 – Total healthcare and public healthcare expenditure compared to GDP

% Values	*Public healthcare expenditure*					
	2010	*2011*	*2012*	*2013*	*2014*	*2015*
United States	7.9	7.9	7.9	8.0	8.2	8.3
Japan	7.8	8.2	9.4	9.1	9.1	9.2
Germany	8.6	8.1	9.0	9.2	9.3	9.4
France	8.7	8.4	8.5	8.6	8.7	8.7
Italy	**7.2**	**6.8**	**6.8**	**6.8**	**6.8**	**6.7**
United Kingdom	-	7.4	6.9	7.8	7.8	7.9
Canada	7.4	7.2	7.2	7.1	7.0	7.2
Average of G7 countries (*)	7.9	7.7	8.0	8.1	8.1	8.2
Average of European OECD Countries (*)	7.5	7.1	7.3	7.2	7.2	7.2
Average of all OECD countries (*)	7.5	7.2	7.3	7.3	7.3	7.3
% Values	*Total healthcare expenditure*					
	2010	*2011*	*2012*	*2013*	*2014*	*2015*
United States	16.4	16.4	16.4	16.3	16.5	16.9
Japan	9.5	10.0	11.2	10.8	10.8	10.9
Germany	11.2	10.7	10.8	11.0	11.1	11.2
France	11.1	10.7	10.8	10.9	11.1	11.1
Italy	**8.9**	**8.8**	**8.8**	**9.0**	**9.0**	**9.0**
United Kingdom	8.9	8.5	8.5	9.9	9.8	9.9
Canada	10.5	10.3	10.3	10.1	10.0	10.3
Average of G7 countries (*)	10.9	10.8	11.0	11.1	11.2	11.3
Average of European OECD Countries (*)	9.7	9.2	9.4	9.5	9.5	9.4
Average of all OECD countries (*)	10.0	9.6	9.8	9.8	9.8	9.8

(*) Averages are calculated as unweighted arithmetic means.

Source: *Ermeneia processing of "OECD Health Data 2017", OECD, Paris, October 2017*

While the OECD countries, variously measured, feature consistently better values and even slight increases from 2013 onwards. This is not to mention that a comparison between Italy and Germany, France and the United Kingdom sees us greatly lagging behind in the overall amount of public healthcare spending compared to GDP.

A similar situation (one that see an even wider gap between Italy and other countries) also applies to the trend in total healthcare spending: with GDP percentages that are far lower for Italy than both OECD countries and the three countries mentioned above.

Added to this, however, is the slight recovery Italy has made thanks to the out-of-pocket spending by families: rising from 8.8% in 2010-2012 to 9.0% in the 2013-2015 three-year period. Moreover, Part Three of this Report is entirely dedicated to assessing the behavior and the reasons that motivate families to invest their own resources into healthcare consumption.

If we then go on to examine the trend of healthcare and hospital spending on the basis of more detailed data for our country (Tables 8 and 9) we can see how in the period 2010-2015:

- total public healthcare spending at current prices increased by only 1.2%, but at constant prices it actually fell by 4.5%;
- overall public hospital spending at current prices increased a little more, by 2.9%, but at constant prices it also decreased (-3.0%);
- total accredited private hospital spending fell by 4.3% at current prices, but 9.8% at constant prices;
- and finally, hospital spending for accredited private facilities saw a decrease at current prices of 2.3%, but much more so at constant prices (-7.9%).

In particular, private hospitals (accredited healthcare facilities) have to deal with the various regional healthcare systems which, faced with the difficulty of streamlining expenditures and even more with the organization and efficiency of services, wind up trying to reduce spending and services by accredited private facilities (Table 10):

- using the “ceiling” system for services (in 90% of cases);
- applying a price regression (in more than 30% of cases) in the event of exceeding the “ceiling”;
- making invoice payments with an average delay of 4.6 months (in 39% of cases), even if monthly advance payments are made in the majority of situations.

Table 8 – Current health spending: 2010-2014 (in billions of Euros + I.N.: 2010 = 100.0)

	2010		*2011*		*2012*		*2013*		*2014*		*2015*	
	in billions of euro	*I.N.*	*in billions of euro*	*I.N.*	*in billions of euro*	*I.N.*	*in billions of euro*	*I.N.*	*in billions of euro*	*I.N.*	*in billions of euro*	*I.N.*
Public hospital facilities	52.333	100.0	52.892	101.1	53.074	101.4	52.244	99.8	52.744	100.8	53.847	102.9
Accredited hospitals	8.849	100.0	8.641	97.6	8.659	97.9	8.255	93.3	8.425	95.2	8.466	95.7
incl.: priv. hosp. (accredited healthcare facilities	4.439	100.0	4.465	100.6	4.471	100.7	4.263	96.0	4.289	96.6	4.335	97.7
Total public hospital system expenditure	61.182	100.0	61.533	100.6	61.733	100.9	60.499	98.9	61.169	100.0	62.313	101.8
Other expenditure features	50.149	100.0	51.276	102.2	51.950	103.6	51.185	102.1	51.504	102.7	50.354	100.4
Total public healthcare expenditure	*111.331*	100.0	*112.809*	101.3	*113.683*	102.1	*111.684*	100.3	*112.673*	101.2	*112.667*	101.2

(*) In the "General Report on the Country's Economic Situation", in 2012, there was a further update of the time series data on spending, but this series however experienced a break due to the uncertainty of the continuity of its publication by the EJN in the future. For 2013 and 2014, the expenditure figures were taken from the 2015 and 2016 Report on the coordination of public finance by the Court of Auditors and the Agenas Report on the monitoring of the spending of the Regions.

Source: *Ermeneia processing of data contained in the "General Report on the Economic Situation of the Country", 2012, Vol. II, from the 2015 and 2016 "Report on the coordination of public finance" by the Court of Auditors and the Agenas Report on the monitoring of the spending of the Regions*

Table 9 – Health spending at constant prices (*) 2010-2014 (in billions of Euros + I.N.: 2010 = 100.0)

	2010		*2011*		*2012*		*2013*		*2014*		*2015*	
	in billions of euro	*I.N.*	*in billions of euro*	*I.N.*	*in billions of euro*	*I.N.*	*in billions of euro*	*I.N.*	*in billions of euro*	*I.N.*	*in billions of euro*	*I.N.*
Public hospital facilities	52.333	100.0	52.127	99.6	51.594	98.6	50.179	95.9	50.178	95.9	50.789	97.0
Accredited hospitals	8.849	100.0	8.516	96.2	8.418	95.1	7.929	89.6	8.015	90.6	7.985	90.2
incl.: priv. hosp. (accredited healthcare facilities)	4.439	100.0	4.4	99.1	4.346	97.9	4.094	92.2	4.080	91.9	4.089	92.1
Total public hospital system expenditure	61.182	100.0	60.643	99.1	60.011	98.1	58.108	95.0	58.193	95.1	58.774	96.1
Other expenditure features	50.149	100.0	50.534	100.8	50.501	100.7	49.162	98.0	48.998	97.7	47.494	94.7
Total public healthcare expenditure	*111.331*	*100.0*	*111.176*	99.9	*110.513*	99.3	*107.269*	96.4	*107.191*	96.3	*106.268*	95.5

(*) GDP deflator calculated on the basis of the new ISTAT series in a chained series with reference to 2010.

Source: *Ermeneia processing of data contained in the "General Report on the Economic Situation of the Country", 2012, Vol. II, from the 2015 and 2016 "Report on the coordination of public finance" by the Court of Auditors and the Agenas Report on the monitoring of the spending of the Regions*

Table 10 – The change in the method of financial charges and settlement of debts of the private hospitals (accredited healthcare facilities)[(a)]

Mechanisms	*% of total cases examined*										
	2017	*2016*	*2015*	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*
– The system of "ceilings" has been applied to services in the past twelve months	90% [(b)]	89%	83%	95%	100%	95%	94%	94%	84%	100%	100%
– A regression rate was applied in the event of overshooting the "ceilings"	32%	24%	32%	35%	50%	41%	50%	50%	56%	72%	70%
– Average regression applied compared to the full price	42%	27%	44%	39%	43%	51%	35%	40%	45%	44%	52%
– Payments for bills are delayed	39%	39%	50%	52%	61%	68%	72%	75%	79%	77%	90%
– Average delay in months	4.6 months	4.4 months	4.7 months	10.9 months	12.5 months	6.0 months	6.9 months	11.8 months	11.6 months	8.0 months	7.3 months
– A monthly payment is made on the invoices of private hospitals (accredited healthcare facilities)	78% [(c)]	72%	70%	86%	75%	63%	78%	83%	83%	72%	70%
– Average size of the payment compared to the invoice	87%	88%	84%	69%	79%	84%	79%	80%	75%	70%	77%
– A factoring system was applied to ensure payments and due dates	21%	33%	30%	35%	40%	37%	17%	18%	11%	12%	26%

(a) As with every year, a special survey of direct witnesses was conducted at the level of the individual Italian Regions. This panel is composed of the AIOP Regional Presidents, who annually respond to a detailed quantitative/qualitative questionnaire.

(b) In 2017 it was actually 94.7% for admission services and 84.2% for outpatient services.

(c) The advance is paid, but not regularly, for 40% of cases in 2007, 39% of cases in 2008 and 2009, 41.2% of cases in 2010, 44.5% in 2011, 15.8% in 2012, 25% in 2013, 29% in 2014, 25% in 2015, 27.8% in 2016, and 27.8% again in 2017.

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

2. The increase and breakdown of out-of-pocket spending by families

2.1. The race to compensate for the decline in public healthcare services

The enduring capacity, in spite of everything, in the standard services offered by the NHS does not mean that there is no attrition taking place, on the one hand, and active reactions being taken by users as a result, on the other hand.

A ready indicator of the intertwining attrition/reaction is demonstrated, in the first instance, by the continual increase in out-of-pocket healthcare spending by Italian families.

In fact, over the course of ten years (2006-2016) this trend shows an increase from 29.1 to 35.7 billion euros at current prices, with an overall increase of 22.4%, as shown in Table 11.

But, in addition to the expansive dynamics of the families' out-of-pocket spending, the dynamics of two other quantities must be considered, namely:

- that of total public healthcare spending, which rose from 99.1 billion euros in 2006 to 113.7 billion euros in 2016, an increase in spending of 14.2% compared to 22.4% for the out-of-pocket spending by families;
- and that of total consumer spending by Italian households, which in turn increased, but to an even smaller extent, specifically 11.0% compared to 22.4% for out-of-pocket spending.

All of this serves to offer an initial glimpse into the compensatory reaction of the families:

- who have reacted to the *de facto* rationing of services, brought about by the reduction of services, increased waiting times, higher costs for access, and a deterioration in quality: with the result of increasing the resources invested in healthcare by the families themselves;

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Table 11 – Increases in out-of-pocket healthcare spending by Italian households compared to total healthcare spending (at current prices [1]

Phenomena	*Data*				
	2006	*2011*	*2014*	*2015*	*2016*
– The fastest growth in out-of-pocket healthcare spending by Italian families:					
▪ in billions of Euro	29.1	33.3	33.7	35.7	35.7
▪ **I.N.: 2006 = 100.0**	**100.0**	**114.1**	**115.8**	**122.4**	**122.4**
– The slower growth of total public healthcare spending:					
▪ in billions of Euro	99.6	112.8	112.7	112.7	113.7
▪ **I.N.: 2006 = 100.0**	**100.0**	**113.2**	**113.1**	**113.1**	**114.2**
– The even slower growth in total consumer spending by Italian families:					
▪ in billions of Euro	929.4	1,012.8	994.1	1,016.1	1,031.6
▪ **I.N.: 2006 = 100.0**	**100.0**	**109.0**	**107.0**	**109.3**	**111.0**
– Percentage of out-of-pocket healthcare consumption spending by families to total public healthcare spending	29.3	29.5	29.9	31.7	31.4
– Out-of-pocket spending for healthcare consumption (per capita average in euros)	493	560	555	588	589
– Total public healthcare spending (per capita average in euros)	1,685	1,899	1,853	1,857	1,877

(1) See Part Three/Table 1 (processing based on ISTAT data), pp. 182-183.
Source: survey by *Ermeneia – Studi & Strategie di Sistema, 2017*

– and who have devoted, despite the profound crisis that we have experienced in the last decade, more resources for healthcare, clearly by reducing consumption in other areas.

It is also appropriate to point out that the dynamics of the increased out-of-pocket spending in the intervening years grew slowly between 2006 and 2008, then contracted at the start of the crisis only to regain strength from 2011 onwards when the families had to deal with the consequences of the spending review, which was dismissed due to a reduction in costs, but without fostering, in parallel, responsibility for an adequate reorganization of services, without which it ended up penalizing users.

In conclusion, the average per capita out-of-pocket spending by households for healthcare consumption increased from 493 to 589 euros between 2006 and 2016, while total public healthcare spending, calculated per capita, rose from 1,685 to 1,877 euros in the same period.

2.2. The composition and reasons for out-of-pocket spending according to statements by caregivers

The data contained in Table 11 above was taken from a survey on the consumption of Italian households, but is limited to considering only three large categories of healthcare spending, specifically:

– medicinal products, healthcare articles and therapeutic material;
– outpatient services;
– hospital services.

It was therefore decided to dedicate part of the 2017 caregiver survey to a more detailed look at the composition of the out-of-pocket healthcare spending of Italian families, and to the assistance spending by the same, as well as to the reasons that motivated these behaviors[1].

Table 12 shows us how caregivers who have sustained one or more healthcare and/or assistance expense, for themselves and/or for other family members:

– make up 77.4% of the national sample interviewed, with reference to those who have made use of public facilities and/or accredited private facilities (true for 19.9 million families);
– on the other hand, 66.7%, once again from the national sample of caregiver respondents, made use of private healthcare and/or assistance facilities for full-payment (true for 17.2 million families);

[1] A detailed comment on the results of the caregiver survey may be found in sections 1.2 and 1.3 of Part Three.

– whereas 81.2% of the former (that is, of the 77.4% mentioned above), although making use of public and/or accredited private facilities, also had access to private healthcare and/or assistance services for full-payment (true for 16.2 million Italian families).

Out-of-pocket healthcare spending relating to healthcare products and/or services amounts to € 26,425 million (see third data group of Table 12), of which:

a) 9,900 million euros pertain to families who also made use of public facilities, participating in various ways in the expense (most importantly, co-payment charges), but also taking on direct costs to integrate the public service with marketplace products and/or services (see first data group of Table 12);
b) and 16,496 million euros, which instead relate to households that opted for direct use of marketplace products or services (see the second group of data in Table 12).

In addition to the expenses above are those relating to assistance which, estimated on the basis of the caregiver respondents' statements, amount to a total figure of 5,604 million euros, to which must be added 7,684 million euros representing the additional estimate, specifically calculated, necessary to assess the real cost of careworkers[2]. Thus, the overall out-of-pocket assistance costs increase to 13,288 million euros (see third data group of Table 12).

This would therefore constitute an out-of-pocket cost for healthcare and assistance expenses, calculated on the basis of caregiver statements, amounting to 39,713 million euros (see again the third group of data in Table 12).

It should however be stressed that estimating all expenses actually borne by the caregiver respondents for the last twelve months is not reasonably possible. There are thus additional implicit expenses that would contribute to a significant increase the aforementioned figure.

As regards the main reasons behind the investment of family resources specifically for healthcare services, we can report on the content found at the end of Table 12, which shows us how:

– in the 1st place, the excessively lengthy waiting lists for tests, diagnostic tests, specialist visits, hospital admissions, etc., (true for a clustering of 46.5% of respondents);

[2] See the detail of the calculations used to estimate the total cost of careworkers in Italy in Section 1 of the Appendices.

Table 12 – Detailed composition of the out-of-pocket spending by Italian families and their motivations, according to caregiver statements (2017)[1]

Phenomena	*Data*
Caregivers that admit to having paid the healthcare and/or assistance expenses for themselves and/or other family members over the last twelve months, despite having had access to the services of public and/or accredited private facilities[2]	
– Claiming one and/or more expense(s)	77.4%
– Estimate of the corresponding number of Italian families involved (in thousands)	19,967
– Estimated total expenses incurred (in millions of euros), of which:	13,039
▪ For healthcare expenses	9,929
▪ For assistance expenses	3,110
– Estimated total weighted average cost per household (in euros)	653
Caregiver that admit to having paid one and/or more expense(s) in the last twelve months for themselves and/or other family members for access to private healthcare and/or assistance services for full payment[3]	
– Claiming one and/or more expense(s)	66.7%
– Estimate of the corresponding number of Italian families involved (in thousands)	17,207
– Estimated total expenses incurred (in millions of euros), of which:	18,990
▪ For healthcare expenses	16,496
▪ For assistance expenses	2,494
– Estimated total weighted average cost per household (in euros)	1,104
Estimated total expenses incurred by Italian families on the basis of the caregiver statements, of which (in million euro)[4]:	39,713
▪ For healthcare expenses	26,425
▪ For assistance expenses	5,604
▪ To supplement estimates of the cost of careworkers at the national level[5]	7,684

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(Continued) *Table 12 – Detailed composition of the out-of-pocket spending by Italian families and their motivations, according to caregiver statements (2017)*[1]

Phenomena	*Data*
Caregivers that admit to having paid the healthcare and/or assistance expenses for themselves and/or other family members over the last twelve months, despite having had access to the services of public and/or accredited private facilities, and who <u>also</u> had access to private healthcare and/or assistance services for full payment:	
▪ Amount %	81.2% [6]
▪ Number of families involved (in thousands)	16,213
Reasons stated by caregivers for the out-of-pocket healthcare spending for themselves and/or for other family members[7]:	
▪ Excessively lengthy waiting lists for tests, diagnostic tests, specialist visits, hospitalizations, etc.	1st place (46.5%)
▪ The fact that certain drugs are no longer prescribed, but also because it is quicker to buy them directly without having to go to the general practioner to write the prescription	2nd place (31.7%)
▪ Ability to use a trusted doctor/specialist	3rd place (28.7%)
▪ Public facility bureaucratic obstacles to get tests, specialist medical examinations, check-ups, etc.	4th place (13.0%)
▪ Inadequate organization of public hospital services	5th place (7.8%)

(1) See Part Three/Sections 1.2 and 1.3 (which illustrate the results of an ad hoc survey conducted in 2017 on a representative caregiver sample).
(2) See Part Three/Table 3, pp. 186-187.
(3) See Part Three/Table 5, pp. 192-193.
(4) See Part Three/Table 5D, p. 199.
(5) A parallel estimate of the total cost for caregivers in Italy was also carried out by means of a cross calculation of objective data (see Section 1 of the Appendices): the result is obviously much higher than that declared by the caregivers and the difference is precisely that indicated (€ 7,684 million).
(6) Intended as 81.2% of the 77.4% mentioned at the beginning of Table 12.
(7) See Part Three/Table 8, p. 202 (the percentages shown represent the "clustering" of responses obtained by the agreement with multiple possible options by the respondents).

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

– the 2nd place is linked to the fact that certain drugs are no longer prescribed or even to the fact that it is easier and faster to buy them directly without having to undergo excessively lengthy waits for the general practitioner to write the prescription (31.7% clustering of responses);
– in 3rd place is the desire to be able to freely choose a trusted doctor and/or specialist (28.7% clustering of responses);
– in 4th place are the bureaucratic difficulties that must be dealt with in public facilities in order to carry out tests, specialist medical examinations, diagnostic tests, etc. (13,0% clustering of responses);
– and in 5th place, a more general reason is given, namely that of the inadequate organization of public hospital services (7.8% clustering of responses).

If we then consider the expenses incurred by families for co-payment charges and various cost sharing methods, for public health products and/or services, for the purchase of drugs, for laboratory tests, diagnostic tests or of specialist visits, for access to the emergency room, as well as *intramoenia* services, we see a figure (that comes in part from caregiver statements and in part on the basis of objective data provided by the Ministry of Health and/or Agenas) that amounts to 7,573 million euros (see first data group of Table 13).

But this figure, when compared to 9,929 million euros, which is the estimated overall expenses incurred by families for healthcare services and products as a result of both cost sharing and the integration of services, yields a ratio that is anything but negligible and is equal to 76.3%. This means that more than 3/4 of the total healthcare costs for those who access public and/or accredited private services are linked to co-payment charges and/or cost sharing.

And, taking this a step further, one can take into consideration the amount of public healthcare spending in 2016 at current prices, which is equal to 113,731 million euros, to which the above expenses should be added, so that 7,573 million euros are actually included in the total figure of total public healthcare expenditure, the amount of which would then actually increase to 121,304 million euros (see the second group of data in Table 13).

In short, it can be argued that the "real" figure of public healthcare spending is 6.7% higher than that officially stated, thanks to that part of the out-of-pocket healthcare spending by families who pay co-payment charges and various forms of cost sharing.

Table 13 – The increased dimensions of total public healthcare spending, adjusted to include cost sharing for access to services by families [1]

Phenomena	*Data*
– Estimated expenses incurred by families for healthcare services and products as a result of cost sharing and/or integration of the same with regard to that obtained/obtainable from the public hospital system, as per Table 12 above (in millions of euros) [2]	9,929
– Estimated expenses incurred by families for co-payment charges and cost sharing for the access to public healthcare products and/or services: for drugs, laboratory tests, diagnostic tests, specialist visits, access to the emergency room, *intramoenia* services (in millions of euros)[3]	7,573
– 2016 percentage ratio between expenses incurred by families for co-payment charges and cost sharing as a result of access to public healthcare system products and/or services	76.3%
– Official 2016 public healthcare spending current prices (in millions of euros [4]	113,731
– Increase due to co-payment charges and cost sharing for access to public healthcare services	6.7%
– Total 2016 public healthcare spending in "real" terms, including co-payment charges and cost sharing by families (in millions of euros)	121,304

(1) Estimates prepared on the basis of the answers provided by caregivers in the survey, the results of which used for the above estimates are contained in Part Three/Section 2.2.
(2) See Part Three/Table 3, pp. 186-187 (estimates calculated on the basis of the statements collected through the caregiver survey).
(3) See Part Three/Table 3, pp. 186-187 and Appendices/Section 1, p. 317 et seq.
(4) See Part Three/Table 1, pp. 182-183.
Source: survey by *Ermeneia – Studi & Strategie di Sistema, 2017*

3. The (increasing) search for alternatives to cope with the weaknesses of the public system

3.1. The perceived deterioration

The motivations that drive families to invest part of their financial resources in order to cope with health-related needs are thus mainly related to the excessively lengthy waiting times to obtain services, bureaucratic difficulties for gaining access to the latter, the decrease in public coverage of certain drugs, and cost sharing (especially co-payment charges). Of course, there are also necessities involving the need and/or choice to integrate services offered by the public system, and the purchase of ostensibly better or more reliable products and/or services found on the market.

However, it should be emphasized that the main reasons are those related to inadequate (or deemed as such) responses by public facilities, which – and it should be remembered – must simultaneously deal with an increase in demand (both due to the aging population and the expectations of better services by users): all of this must be dealt with increasingly limited public resources and not infrequently in a situation inevitably involving previous budget deficits by some regional health systems.

The result of all this leads to growing dissatisfaction among the caregivers, whether or not they have had the occasion to use healthcare and social assistance services for themselves and/or family members in the last twelve months. We can see how this level of dissatisfaction (see the first data group of Table 14):

- increased from 21.3% in 2015 to 32.2% in 2017, but was 36.7% for those interviewed in Central Italy and even 51.3% of caregivers residing in the South;
- and a similar dynamic is detectable as regards hospitals specifically, given that the level of dissatisfaction went from 22.7% in 2016 to 30.2% in 2017 (yet in the last year, actually, a negative opinion was given by 36.1% of

the caregivers in Central Italy and even 50.6% of the caregivers in the South).

Furthermore, the slight and/or lack of feeling of "being placed at the center as patients" by the caregivers (and/or related family members) who have actually had hospital experiences in the last twelve months, increased over the three years considered, going from 19.3% in 2014 to 32.4% in 2017, yet with an obviously worse situation in Central Italy (34.0%) and the South (41.3%), as shown in the second data group of Table 14.

The phenomenon of the worsening in the treatment of patients has also been reported, as attested to by the caregivers who have had experiences in public hospital facilities in the previous two years: this perceived deterioration was 15.2% in 2015, but rose to 18.0% in 2017 (see third data group of Table 14).

A further element of perceived inconvenience is that relating to the potential postponing and/or foregoing of the services, which have been calculated (for the year 2017) as a ratio between the admissions of postponing and/or foregoing and the total of potential individuals in need, constituted in turn by people who have foregone, postponed or have actually had access to services[1]. Naturally, also in this case we took into account the statements of the caregivers on the topic of the postponing and/or foregoing the use of one or more services by themselves and/or other family members. Here we can see how (see the fourth group of data in Table 14):

- more than 1/4 (26.8%) of the caregiver respondents have effectively postponed and/or foregone the use of one or more services in 2017;
- but 20.0% of those who forewent and/or postponed in 2017 also did without in 2016;
- and yet another 16.5% of those who postponed and/or forewent in 2017 had similarly postponed and/or done without even in 2016.

As can be seen, this is a phenomenon that can take on "recursive" characteristics over time, presumably contributing to a worsening of people's health conditions.

As regards the main reasons for the postponing and/or foregoing of services, it is possible to report (see the last data group of Table 14):

- the continuation of the same order of priority of these reasons between 2016 and 2017 which sees in 1st place – and with great agreement by the respondents – the financial difficulties of families (the crisis evidently made its influence felt), and in 2nd place excessively long waiting times, with a similarly strong agreement;

[1] For further details, see Part Three/Table 9B and related comment.

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Table 14 – The perception of the progressive deterioration of public healthcare services and the inadequacy of "connection systems[1]

Phenomena	*Data*					
– The increasing dissatisfaction with the healthcare system of the home Region by caregivers ("Slightly + Not at all satisfied" opinions)[2]:				*2017*		
	2015	*2016*	*Total*	*North*	*Center*	*South*
▪ With regard to healthcare and social assistance services	21.3	25.0	32.2	17.3	36.7	51.3
			Total	*North*	*Center*	*South*
▪ With regard to hospitals in the home Region		22.7	30.2	14.0	36.1	50.6
		2014[3]		*2017*[4]		
– The slight and/or lack of feeling of "being placed at the center" as patients, among caregivers who have had hospital experiences in the last twelve months			*Total*	*North*	*Center*	*South*
		19.3	32.4	27.8	34.0	41.3
– A worsening in the treatment of patients (caregivers and/or family members) in public hospital facilities with reference to the last two years ("Treatment was slightly + decidedly worse" opinions)[5]					*2015*	*2017*
					15.2	18.0
– The recurring postponing and/or foregoing of one or more services by care-givers and/or other family members, in the last three years[6]:						*2017*
▪ Foregoings and postponements in 2017 out of the total individual need						26.8
▪ Foregoings and postponements in 2016 compared to those who postponed or did without in 2017						20.0
▪ Foregoings and postponements in 2015 compared to those who postponed or did without in 2017						16.5
– The main reasons for the postponing and/or foregoing of services[7]:				*2016*		*2017*
▪ Family financial difficulties				1° (54.6)		1° (48.8)
▪ Excessively lengthy waiting lists				2° (52.1)		2° (47.6)
▪ Bureaucratic difficulties in gaining access to treatments				3° (15.8)		3° (16.1)
▪ The reduction of treatments (and services) offered to patients				4° (10.2)		4° (14.0)
▪ The deterioration of treatments (and services) offered to patients				5° (8.9)		5° (10.0)

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(Continued) *Table 14 – The perception of the progressive deterioration of public healthcare services and the inadequacy of "connection systems"*[1]

Phenomena	*Data*	
– The increasing lack of "connections" when selecting a hospital ("Extremely difficult + somewhat important")[8]	*2014*	*2017*
▪ Finding reliable information about the hospital, doctors, hospital services, in order to choose the most appropriate facility	29.7	38.2
▪ Not receiving any information from the primary care physician, who was unable to direct the patient to the most suitable hospital	27.3	32.9
▪ Having waited too long because there was no room when the need arose	24.2	54.1
▪ Use of the Emergency Room (or emergency number 118) to take advantage of emergency admission, as the admission would not have been possible or would have taken too long	24.6	26.2
– The increasing lack of "connections" when selecting a hospital ("Extremely difficult + somewhat important")[9]		
▪ The discharge was too quick and the patient was not yet sufficiently recovered	16.4	30.5
▪ There was no mid-level hospital facility in which the patient could continue treatment, especially in the case of severe illnesses (the hospital stay is now too short and discharge too quick)	15.4	28.9
▪ Post-hospitalization rehabilitation facilities were not adequate for the surgery and/or treatment previously undergone in hospital	21.7	25.6
▪ The patient had to return to the hospital because there was not an adequate connection with the social assistance services for the post-hospitalization phase (rehabilitation and long-term facilities, assisted living residences, home care, etc.)	18.1	21.2

(1) Based on the statements of the caregiver survey, contained in Part Three of this Report.
(2) See Part Three/Table 11, p. 213 and Table B11 in Section 4 of the Appendices, p. 415.
(3) See *Ospedali&Salute/2014 Report*, Table A/9 in Section 4 of the Appendices.
(4) See Appendices, Section 4/Table B13, p. 419.
(5) See Part Three/Table 18, p. 228.
(6) See Part Three/Table 9B, p. 208.
(7) See Part Three/Table 10, p. 210 (the percentages shown represent the "clustering" of responses obtained by the agreement with multiple possible options by the respondents).
(8) See Part Three/Table 12, p. 215.
(9) See Part Three/Table 15, pp. 222-223.

Source: survey by *Ermeneia – Studi & Strategie di Sistema, 2017*

– but also the emergence of a relative loss of importance of the first two reasons mentioned between 2016 and 2017, compared to an increase in importance of the following three reasons that instead concern:
  - the bureaucratic difficulties necessary to access the services;
  - the reduction of services effectively offered to patients;
  - and finally, the deterioration in the services offered by the individual facilities.

One aspect of the progressive worsening of services concerns the topic of "connections", examined in this section at the moment of access to hospital and when addressing the post-discharge period.

Table 14 mentions some of the difficulties as stated by caregivers in 2014 and again in 2017. The result presents a picture of evidently increasing inconvenience. In fact, if one must go to the hospital the most difficult thing is obtaining information, because:

– finding reliable information about hospitals, doctors and related services is an increasingly difficult problem (up from 29.7% in 2014 to 38.2% in 2017);
– also because often there is no information from the general practitioner in this regard (increasing from 27.3% to 32.9% in the three-year period).

The result in many cases is having to wait, even for a long time, until it is your turn in the waiting lists. But this can create a problem for the patient: the increase in the three-year period of such difficulties gives an idea of the importance of this aspect (up from 24.2% to 54.1%). As a result one can make use of the Emergency Room solely in order to take advantage of emergency admission and thus cut out the waiting lists, this situation affected 24.6% of caregivers in 2014, but 26.2% in 2017.

There is also a subsequent delicate moment in which the inadequacy of the "connection system" is felt: this relates to the decisions that must be made when the patient is discharged and must undertake the next necessary steps. In fact, Table 14 once again show us how even in this case deterioration over the three-year period is completely evident, given that:

– discharges that were too quick when the patient was not yet sufficiently recovered was found to be an experience among 16.4% of the caregivers in 2014, and this incidence almost doubled in 2017 (30.5%);
– in this regard, there is a consistent lack of a mid-level hospital facilities to complete the treatment process with some additional medical assistance, especially in the case of severe illnesses, because often the discharge is too quick (even in this case the data only confirms those above, given that it went from 15.4% in 2014 to 28.9% in 2017);

– in particular, it may also happen that post-admission rehabilitation facilities are not suitable for the surgery or the treatment previously received in the hospital: this was an important issue for 21.7% of caregivers in 2014, and rose to 25.6% in 2017;
– and finally, it can also be verified that patients had to return to the hospital precisely because there was no adequate connection with the social assistance services for the post-admission phase, such as rehabilitation, long-term care, assisted living residences, home care, etc. and in this case the difficulties increased from 18.1% in 2014 to 21.2% in 2017.

In conclusion, we can therefore state that there is a progressive increase in the implicit rationing of services, linked to the most varied reasons: the increase in bureaucratic difficulties for access, the reduction and/or a deterioration of the services, as well as the increased difficulties in terms of "connection systems", both during admission to and discharge from the hospital.

3.2. The formation of a framework of reaction strategies

The weaknesses relating to the provision of healthcare services is a phenomenon that grows over time, provoking, as mentioned in the most recent "Health&Hospitals" Reports, a sort of "cumulative effect" that winds up aggravating the conditions of access and use of healthcare services. But this is accompanied by a parallel "reinforcing effect" on the strategies adopted by citizens and users who try to make up for the overall deterioration of the system, including the use of out-of-pocket spending by families[2] as a non-exclusive component of these strategies, since there are parallel, alternative/compensatory propensities and behaviors on several levels: it may be said that users "vote with their feet as well as with their heads", moving from one type to another as well as from one territory to another in search of more appropriate responses.

The first significant example of such "reactive behavior" involves the use of accredited private hospitals or private clinics for payment by caregivers (or other family members) as a result of inconveniences encountered in public hospital facilities.

In this regard, we can see how the responses tend to strengthen over the last two years considered (the relative surveys were conducted in 2015 and 2017), given that (see the first group of data in Table 15):

[2] This topic is discussed in detail in Part Three/Section 2 and is summarized in Tables 7, 8 and 9 above.

– 40% or more of the respondents said they had had access to accredited private hospitals;
– and about 20% said they had resorted to private clinics.

And as for the reasons behind the use of accredited private hospitals we can see how (see the second group of data in Table 15):

– in 1st place is the shorter waiting time required to obtain services compared to the public hospital in both years considered;
– but between 2015 and 2017, two reasons grew in importance, that of greater trust in the accredited hospital and the doctors who work there, and that relating to a careful and well-reasoned decision made within the family;
– while other reasons such as the proximity of the hospital to one's own home or the advice of relatives, friends and acquaintances tended to diminish slightly in importance;
– and finally, for almost 1 in 10 respondents, "a certain underlying mistrust of the public hospital system" remains constant.

A second significant example of "reactive behavior" over the previous twelve months concerns the propensity to access hospital facilities in Regions other than that of residence of the caregivers and related family members (see third data group in Table 15).

In this case, there was a marked increase in real and potential inclinations towards a choice of this type, if the propensity is simply measured at a distance of only one year between the two surveys conducted. More specifically:

– caregivers who stated that they intended to actually make use of extra-regional hospitalization went from 10.1% to 16.4% between 2016 and 2017, including those who actually had this experience, as well as the respondents who were ready to do it but then gave up because the waiting list was too long; or those who wanted to make use of this type of hospitalization but the referring local health authority did not give permission or those who did not do so solely because there was a problem related to the expenses they would have to bear as caregivers to assist the patient;
– caregivers who stated that they were inclined to make use of this option increased from 18.1% to 31.3%, again during the two years under consideration: in this case, including the respondents who did not actually do so but nevertheless entertained the possibility of using hospitals in another Region, as well as the respondents who, having failed to use this option, stated that, in the event of a serious health problem, they would certainly consider the possibility of using hospitals outside their own Region;

– and finally, caregivers who did not have to deal with this issue fell from 71.8% in 2016 to 52.3% in 2017 due to various reasons: either because the hospital facilities in their home municipality, province or region were sufficiently or completely suitable for their needs at the time or because they were not aware that hospitals outside the Region could be used without any additional cost for the patients.

As regards the main reasons for the (actual or potential) use of hospitals in other Regions by caregivers, we mention what emerged from the 2016 survey, which highlighted how caregiver respondents:

– set in 1st place, in a rather strong manner (44.2% clustering of responses) the quality of the healthcare-hospital services compared to those of their own Region;
– and set in 2nd and 3rd place (with a clustering of responses around 30%) the presence of trusted medical personnel in the extra-regional hospitals chosen as well as the presence in these hospitals of specializations that did not exist in their regional hospital facilities;
– feared that serious health reasons are in themselves an important but not sufficient reason and for this reason placed it in 4th place (20.7% clustering of responses);
– yet excessively lengthy waiting lists in the hospitals of their home Region received only 5th place in order of priority (16.9% clustering of responses) and, with practically the same intensity (16.5%), they then ranked the quality of hospitality services (such as room, food, service staff in the facilities of Regions outside their own).

Moreover, if we consider the objective data (see the fifth data group in Table 15), we can see how the number of extra-regional hospitalizations tends to decrease in absolute values, but increase in percentage values, if compared to the number of total hospitalizations, which in turn decrease drastically: in fact, the percentage of extra-regional hospital admissions out of total hospitalizations went from 8.2% in 2010 to 9.2% in 2015, while total admissions decreased by 16.4% in 2014 compared to in 2010 and 2.8% between 2014 and 2015: this is an evident sign of an active reaction strategy pursued by patients and their families.

Alongside the concrete behaviors and/or the explicit inclinations towards alternative/compensatory solutions, the propensities and the informational awareness that may affect users or citizens in a more general fashion should also be considered.

In the sixth data group in Table 15 we can see how the propensity to choose between various possibilities at the time of hospitalization by the ac-

tual users of the relative services in the last twelve months, gradually increased from 21.2% in 2009 to 29.8 % in 2017.

Whereas, if we consider Italian citizens, we can see how (see the 7th and 8th data group in Table 15):

- there is an increase – albeit slow – in the (clear) awareness of the provision that allows use of both public hospitals and accredited private hospitals, given that it went from 35.5% of respondents in 2009 to 39.3% in 2017;
- also the awareness – again by Italian citizens – of the possibility to be transferred for healthcare reasons to hospitals outside their own Region without additional costs remains high, given that the respondents remain around 31% between 2009 and 2017 (if we consider those who claim to be perfectly aware of this opportunity); but also the number of those who "seem to remember" increases, the number increasing from 41.5% to 44.7%;
- and similarly citizens' awareness of the European provision that allows them to seek healthcare and hospital services in the facilities of different EU countries has increased, since those who are fully aware of it went from 14.1% in 2013 (the year this legislation came into force) to 18.5% in 2017 and in parallel also the number of those who "have at least heard of it" rose, increasing from 29.1% to 34.2% in the same period.

Finally, a particular question was asked in the special survey of the national sample of 4,000 adult citizens in 2017. The last data group in Table 15, in fact, reports the answers of the respondents to the question about which type of facility they would prefer to use, based on their experience and in the presence of a serious and/or urgent health problem, for visits, tests, diagnostic tests or admissions: and offering the choice between, on the one hand, local health authority (ASL) services (general practitioner, specialist polyclinics, *Case della salute* or local health reference points, etc.) or, on the other, the hospitals.

Table 15 – Compensatory strategies implemented by patients as a response to the deterioration of public healthcare services

Phenomena	*Data*	
– Use in the last twelve months of accredited private hospitals or private clinics for payment by caregivers and/or family following inconveniences experienced with access to services provided by public hospitals and the relative quality of these services[1]:	*2015*	*2017*
▪ Use of accredited private hospitals	40.6	41.3
▪ Use of private clinics	20.3	19.2
– Reasons for the caregivers and/ or family members making use of accredited private hospitals in the last two years[2]:	*2015*	*2017*
▪ Lower waiting times for services	1° (42.0)	1° (44.6)
▪ Greater confidence in the accredited hospital and the doctors who work there	4° (20.9)	2° (29.3)
▪ Too long a wait for admission to a public hospital	2° (30.1)	3° (24.0)
▪ Hospital's proximity to home	3° (22.3)	4° (21.8)
▪ A careful and well-thought-out assessment by the family	6° (13.9)	5° (19.9)
▪ Advice of relatives, friends and acquaintances	5° (14.3)	6° (12.2)
▪ A certain distrust of the public hospital system	7° (9.5)	7° (9.2)
– Recourse to hospital facilities in other Regions in the last twelve months by care-giver and/or other members of the family[3]:	*2016*	*2017*
▪ Inclination to actually make use of extra-regional hospital facilities	10.1	16.4
▪ Inclination to potentially make use of extra-regional hospital facilities	18.1	31.3
▪ The issue did not arise	71.8	52.3
The main reasons care-givers and/or members of the family turn to hospital facilities outside the home Region[4]:		*2016*
▪ The quality of hospital health services compared to those of the home Region		1° (44.2)
▪ The presence of trusted medical personnel in the hospitals outside the home region		2° (31.0)
▪ The presence of specializations that do not exist in hospital facilities of the Regional Health Service		3° (30.4)
▪ Serious health reason		4° (20.7)
▪ The presence of too lengthy waiting lists in the hospitals in my own Region		5° (16.9)
▪ The quality of hospitality services (rooms, food, service personnel, etc.) compared to the facilities in my own Region		6° (16.5)
– Use of hospital facilities in other Regions for treatment/procedures in the last twelve months by care-givers and/or immediate/extended family members compared to the parallel trend of total hospitalizations in Italy[5]:	*2010*	*2014*	*2015*
▪ Number of hospitalizations in other regions	810,000	735,000	741,000
▪ % of other region hospitalizations out of total hospitalizations	8.2	8.9	9.2
▪ Number of total hospitalizations in Italy	9,906,007	8,280,795	8,048,998
▪ % decrease in total hospitalizations in the period 2010-2015	-	-16.4	-2.8

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(Continued) *Table 15 – Compensatory strategies implemented by patients as a response to the deterioration of public healthcare services*

Phenomena	*Data*		
– Trend of the propensity to choose from among the various possibilities at the time of hospitalization, in the last twelve months by users[6]:	*2009*	*2013*	*2017*
	21.2	28.0	29.8
– Awareness among Italian citizens of the provisions that permit the use of both public and accredited private hospitals[7]:	*2009*	*2013*	*2017*
▪ Yes, very clear	35.5	39.3	39.3
▪ Yes, but a little uncertain	43.1	40.6	44.7
– Awareness among citizens of the opportunity to seek treatment in hospitals outside of their Region[8]:	*2009*	*2013*	*2017*
▪ I am perfectly aware of this	31.9	35.2	30.8
▪ I seem to remember that is a possibility	41.5	41.0	44.7
– Awareness among citizens of the opportunity to travel for healthcare and hospital services at facilities in different European Union countries[9]:		*2013*	*2017*
▪ Yes, I am aware		14.1	18.5
▪ Yes, I've heard of it		29.1	34.2
– Propensity of citizens who have (or think they have) a serious and/or urgent health problem to make use of hospital services rather than local medical care[10]:			*2017*
▪ Prefer more to go to the primary care physician			1° (78.2)
▪ Prefer, in the event of an inadequate response from the primary care physician or local healthcare professionals, to make use of a trusted hospital system specialist			2° (59.2)
▪ Prefer to go directly to the hospital emergency room in the event they do not receive an adequate/quick response from the primary care physician or from local healthcare professionals			3° (43.9)
▪ Prefer to go directly to the hospital emergency room if waiting lists for specialist visits, diagnostic tests or hospitalizations are too long			4° (26.8)
▪ Prefer to go immediately to the hospital emergency room rather than the local healthcare authority services to avoid wasting time			5° (19.7)
▪ In summary, they tend to use the hospital more than the local healthcare authority services			6° (20.0)

(1) See Part Three/Table 19, p. 230.
(2) See Part Three/Table 20, p. 231 (the percentages shown represent the "clustering" of responses obtained by the agreement with up to three possible options by the respondents).
(3) See Part Three/Table 21, p. 233.
(4) See *Ospedali&Salute/2016 Report,* Part Three/Table 10.
(5) Processing of Ministry of Health data, beginning from the SDO data.
(6) See Part Two/Table 5, p. 146.
(7) See Part Two/Table 7, p. 149.
(8) See Part Two/Table 8, p. 151.
(9) See Part Two/Table 11, p. 158.
(10) See Part Three/Table 13, p. 160 (the percentages shown represent the "clustering" of responses obtained by the agreement with up to three possible options by the respondents). + Tables A13, B13 and C13, found in Section 3 of the Appendices.

Source: survey by *Ermeneia – Studi & Strategie di Sistema, 2017*

The result shows quite clearly a phenomenon of progressive "territorialization" of hospital services compared to those of local medical services, with many distortions regarding the improper use of the Emergency Room as an instrument to overcome inadequacies and delays in the healthcare services as well as personal anxieties relating to diagnosis and treatment or interventions. In fact:

- the main propensity is to first go to the primary care physician (1st place, 78.2% clustering of responses);
- then there is an explicit and preferential inclination towards the hospital facility and specifically towards a trusted specialist physician who works there in the event of a perceived inadequate response from the primary care physician (this inclination occupies 2nd place in order of priority, 59.2% clustering of responses);
- then, there emerge at least three propensities that have to do however with the more or less direct urge to use the Emergency Room: either because there is not an adequate and/or quick response from the general practitioner or the local healthcare professionals (answers that occupy 3rd place in order of priority, 43.9% clustering of responses); or because waiting lists for specialist visits, diagnostic tests or admissions are too long (answer that is in 4th place, 26.8% clustering of responses); or, even for the simple reason that they do not want to waste time (reason placed in 5th place, 19.7% clustering of responses).

Yet it is interesting, in addition to what has just been mentioned, to report – briefly – how 1 in 5 respondents do not hesitate to declare that "they prefer to use the hospital more than the local healthcare services". And this inclination equal to 20% on average for the whole sample is accentuated[3]:

- more for the male component (23.7%) than for the female component (16.5%);
- more for those who occupy the role of head of the household (24.4%) than those who do not occupy that role (16.6%);
- more for those who reside in the North (about 22%) than those living in the South (17.2%);
- more for those living in municipalities of medium and/or large size (about 24%) compared to those who live in smaller municipalities (15.6%);
- more for those self-identify with a low and/or medium-low social-economic level (24.9%) compared to a medium and/or medium-high level (around 15%);

[3] See in this regard the cross-reference tables A13, B13 and C13 of Section 3 of the Appendices, which contain all the cross-reference tables related to the population survey/2017.

– but especially for those who had to experiment and for those who had to make use of hospital services in the presence of an illness and/or a serious intervention (36.3%!) compared to those affected by a less serious illness/intervention (16.6%);
– and in general by those who are not aware of the alternatives existing among public and accredited private facilities (25.1%), opportunities to seek care in facilities other than those in their own Region (25.2%) or similarly to make use of hospital facilities in other European countries (24.4%).

3.3. The parallel need for a good public prevention strategy*

3.3.1. The economic crisis has further highlighted its importance

As already mentioned in the 2016 "Health & Hospitals" Report[4], the financial/economic crisis that Europe and the West have experienced in recent years has also caused the reduction of investment in the Health System, and the overall impact that these events have had on the outcomes of people's health is a well-known national debate.

It can be assumed that the crisis may have a determinant function on health linked to the reduction of access to healthcare in general and specifically of treatment subject to co-payment charges or other out-of-pocket payment forms. Moreover, it can certainly be said that the crisis and the relative "loss of control" on people's lives, especially those belonging to less well-off social classes[5], occur above all at the level of social components, albeit with inevitable repercussions on health-related components as well.

The tables below (Tables 16, 17 and 18), produced by Istat[6], describe how the foregoing of different healthcare services (rehabilitation, specialist exams, purchase of drugs) in the different macro-areas of Italy, occurred precisely due to excessive costs, according to the opinions of the respondents.

* Contributed by Paolo Parente, Public Health Physician in the Department of Public Health, University Cattolica del Sacro Cuore in Rome, *PhD Candidate in the Health Services and Public Health.*

[4] See Part Three, Section 1.4, p. 64.

[5] See Marmot M., *The health gap: the challenge of an unequal world*, Bloomsbury Publishing, 2015.

[6] See Istat, *La cura e il ricorso ai servizi sanitari*, 2015, http://www.istat.it/it/archivio/156420.

Table 16 – People who have foregone rehabilitation treatment in the twelve-month period prior to the survey by reason, evaluation of financial resources and geographical distribution. 2013 (for 100 people with the same characteristics)

Territory	Foregone at least once (a)	Reason for foregoing (b)					
		Excessive costs	Lengthy waiting list	Logistical issues	Work-related reasons	Family reasons	Other
– North- West	1.8	56.1	17.9	10.7	15.0	7.2	9.7
– North-East	2.5	58.6	14.9	11.4	15.8	10.2	9.8
– Center	2.6	67.4	17.9	14.4	11.6	7.2	7.9
– South	2.5	72.4	13.2	15.4	7.7	6.1	5.2
– Islands	3.1	66.0	13.1	15.8	8.8	6.0	9.1
Italy	*2.4*	*64.4*	*15.4*	*13.5*	*11.8*	*7.4*	*8.1*

(a) For 100 people with the same characteristics.
(b) For 100 people with the same characteristics that have done without at least once.
Source: *Istat, "La cura e il ricorso ai servizi sanitari", 2015. http://www.istat.it/it/archivio/156420*

Table 17 – People who have done without one or more specialist exams in the twelve-month period prior to the survey by reason, geographical distribution and evaluation of financial resources. 2013 (for 100 people with the same characteristics)

Territory	Foregone at least once (a)	Reason for foregoing (b)					
		Excessive costs	Lengthy waiting list	Logistical issues	Work-related reasons	Family reasons	Other
– North-West	2.7	51.1	27.1	5.3	17.8	5.9	8.2
– North-East	3.4	47.7	28.2	6.2	16.7	8.0	9.9
– Center	5.2	53.6	43.2	6.7	10.5	6.8	6.0
– South	6.4	69.4	26.8	9.4	8.0	4.8	4.0
– Islands	6.8	67.2	29.7	9.1	8.0	4.6	4.8
Italy	*4.7*	*59.7*	*31.2*	*7.7*	*11.3*	*5.8*	*6.0*

(a) For 100 people with the same characteristics.
(b) For 100 people with the same characteristics that have done without at least once.
Source: *Istat, "La cura e il ricorso ai servizi sanitari", 2015. http://www.istat.it/it/archivio/156420*

Table 18 – People who have foregone the purchase of drugs in the twelve-month period prior to the survey by reason, evaluation of financial resources and geographical distribution. 2013 (for 100 people with the same characteristics)

Territory	*Foregone at least once (a)*	*Reason for foregoing (b)*		
		Excessively high co-payment charge	*Having to pay out of own pocket*	*Other reasons*
– North-West	2.8	26.9	70.0	3.1
– North-East	2.8	25.4	69.7	4.9
– Center	3.4	27.1	69.3	3.5
– South	5.9	24.4	72.3	3.3
– Islands	6.0	23.6	73.9	2.5
Italy	*4.0*	*25.3*	*71.3*	*3.4*

(a) For 100 people with the same characteristics.
(b) For 100 people with the same characteristics that have done without at least once.
Source: *Istat, "La cura e il ricorso ai servizi sanitari", 2015. http://www.istat.it/it/archivio/156420*

In particular, 64.4% of people who have foregone recourse to rehabilitative treatment throughout the country have complained about excessive costs as a cause of doing without (Table 16), 59.7% offered the same reason for not having undergone specialist exams (Table 17), and 71.3% of those surveyed said they had not purchased drugs because they entailed an out-of-pocket expense (Table 18).

This assumption is also confirmed by the caregiver survey prepared for this Report. First of all, 27% of the survey sample stated that they have foregone and/or postponed (personally and/or for other family members) one or more services during the last year[7]. The following reasons behind these failures to access services have been attested to since 2017 (Table 19)[8]:

– family financial difficulties (in 48.8% of cases);
– excessively lengthy waiting lists (47.9%);
– bureaucratic difficulties (16.1%);
– the reduction of services offered to patients (14.0%);
– deterioration of services (10.0%).

*Table 19 – Reasons for the postponing and/or foregoing of treatments**

Answers	*2016*		*2017*	
– Family financial difficulties (to pay for co-payment charges, access, services, etc.)	*1st*	54.6	*1st*	48.8
– Waiting lists for services are too lengthy	*2nd*	52.1	*2nd*	47.6
– Bureaucratic difficulties in gaining access to services	*3rd*	15.8	*3rd*	16.1
– The reduction of treatments (and services) offered to patients	*4th*	10.2	*4th*	14.0
– The deterioration of treatments (and services) offered to patients	*5th*	8.9	*5th*	10.0
– Other difficulties		2.0		3.5
Average number of answers per respondent		1.4		1.4

(*) Multiple choices.
Source: *See Part Three /Table 10, p. 210*

Furthermore, it should be emphasized that the last three elements worsened in 2017 compared to 2016. It is therefore clear that postponing or foregoing medical care or healthcare services may be considered as one of the possible consequences of the worsening of people's financial status, as well as of a still sluggish, sometimes too bureaucratic healthcare organization dispensing treatment that is viewed as lacking in quality.

This framework holds many critical issues in terms of healthcare that may be considered to be a direct or indirect result of the crisis. Naturally, prevention may be considered to be a fundamental instrument for guaranteeing

[7] See *Health & Hospitals/2017* Report, Part Three/Table 9B, p. 208.
[8] See *Health & Hospitals/2017* Report, Part Three/Table 10, p. 210.

greater equity and effective sustainability for the Health System, as well as an essential element for the health of citizens.

The aspect of prevention is of particular interest for Italy, as already in 2012 the Organization for Economic Cooperation and Development (OECD) described our country as that with the lowest spending in the area of healthcare prevention; this ranking has remained almost unchanged up to the present. International comparisons indicate that spending for prevention activities amounts to 2.9% of total healthcare spending, which remains constant over the years. This incidence appears to be significantly lower than the 5% envisaged by the national planning, with few exceptions and with much regional variability within the various expenditure items (Table 20).

Investment in prevention, even if considered among those having one of the best cost/effectiveness and cost/benefit ratios, still appears to be insufficient compared to what is needed to ensure the sustainability of projects and actions that concretely look to the future[9].

Much can be done, for example, regarding the prevention of chronic illnesses[10].

Effective prevention is all the more important, bearing in mind that much can be done for chronic non-communicable diseases (NCDs), considered today the leading cause of death in Italy, Europe and in the world. The World Health Organization (WHO) notes in recent reports on the state of global health that about 36 million people die every year from heart disease, stroke, chronic lung disease, cancer and diabetes and almost 80% of these deaths occur in low and middle income countries.

The increase in chronic non-communicable diseases represents a huge challenge, not only for health and healthcare but, more generally, for sustainable development. Chronic non-communicable diseases cause billions of dollars in national income losses and each year they drag millions of people below the poverty line. Every single death caused by one of the main risk factors related to lifestyles is, by definition, avoidable in the light of individual conduct that follows basic standards of behavior, and the respect of health models whose effectiveness in preventing the onset of the overwhelming majority of chronic diseases is known[11].

[9] See Ministry of Health, *Piano Nazionale per la Prevenzione 2014-2018. Available* at: www.salute.gov.it/portale/documentazione/p6_2_2_1.jsp

[10] Ibidem.

[11] See *Osservasalute 2016*, Rosano A., and Marino M., "Stato dell'arte della prevenzione in Italia".

Table 20 – Spending on prevention expressed as a percentage of total healthcare spending, by Region and macro area (2006-2013)

Region/Macro area	*Spending on prevention (percentage of total healthcare spending)*							
	2006	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*
Abruzzo	3.79	4.24	4.21	4.27	4.53	4.61	4.26	4.50
Basilicata	4.79	6.06	5.89	5.09	4.63	4.01	3.84	4.45
Calabria	4.75	6.02	5.02	4.75	5.13	5.35	4.95	5.07
Campania	4.57	4.83	5.77	4.64	4.34	4.22	4.01	4.75
Emilia-Romagna	4.25	4.41	4.38	4.18	4.12	4.27	4.04	4.12
Friuli V.G.	2.96	2.80	2.88	2.90	2.77	2.59	2.43	2.98
Lazio	3.12	2.67	2.98	3.29	3.09	3.16	3.60	3.51
Liguria	2.90	2.99	2.89	2.92	2.70	3.72	3.84	3.97
Lombardy	4.57	4.53	4.21	4.61	4.55	4.57	4.57	4.50
Marche	3.84	3.93	4.01	4.05	3.94	3.58	3.75	3.83
Molise	4.46	4.87	3.94	4.88	4.08	4.02	3.93	5.15
Piedmont	4.27	4.35	4.35	4.22	4.07	4.13	4.05	4.03
A.P. of Bolzano	3.24	4.02	4.09	5.25	4.66	4.39	4.37	4.37
A.P. of Trento	3.23	3.12	3.09	3.20	2.83	2.76	2.75	2.69
Apulia	3.52	3.63	3.56	3.69	3.65	3.78	3.82	4.09
Sardinia	6.02	5.33	5.65	5.90	6.10	5.66	4.96	4.77
Sicily	3.71	4.28	3.47	4.56	4.78	4.68	4.54	4.12
Tuscany	4.51	4.45	4.81	4.34	4.42	4.29	4.23	4.32
Umbria	4.62	4.59	4.41	5.22	4.99	4.97	4.56	4.65
Aosta Valley	5.65	5.95	6.24	6.00	5.78	5.70	6.36	5.91
Veneto	3.78	3.85	4.09	3.89	4.10	3.90	3.60	3.76
North	4.10	4.15	4.07	4.15	4.09	4.15	4.05	4.10
Center	3.73	3.42	3.77	3.86	3.75	3.71	3.89	3.89
South and Islands	4.22	4.61	4.52	4.54	4.54	4.49	4.28	4.49
Italy	*4.06*	*4.13*	*4.16*	*4.22*	*4.17*	*4.17*	*4.09*	*4.18*

Source: *OsservaSalute 2016 Report*

Thus, while on the one hand it is necessary to remind the citizen to focus on a personal "salutogenesis" approach, on the other hand it is essential to ensure prevention and promote health by adopting policies that promote strategic action to deal with chronic disease by undertaking more efficient anti-tobacco initiatives, promoting healthier diets, implementing physical activity and active transport, and reducing harmful and risky alcohol consumption.

In Italy, one of the longest-lived countries in the world, the burden of non-communicable diseases is among the highest, and this is not only due to longevity alone. About 30% of the people who die of non-communicable diseases belong, in fact, to low and middle income groups that have evidently suffered further due to the crisis[12].

All of this brings us to the present challenge of undertaking effective actions and measures that can save millions of lives and reduce the rising costs of healthcare.

Such measures may include, for example:

– the implementation of the WHO Framework Convention on Tobacco Control (through increased consumption taxes or the ban on advertising, or by implementing laws to limit smoking in public places);
– the promotion of physical activity as a precious resource in the fight against numerous diseases, including obesity;
– the adoption of best buys, in the form of interventions aimed at rethinking the methods of alcohol taxation, which according to some should be in parallel and progressive according to the alcohol content, and by reducing the physical and financial availability of alcohol in particular to minors, reducing its ubiquitous availability to them as defined by *Global Strategy on Alcohol*, also the reduction of salt levels in food, promoting food education within the more general framework of health education in schools;
– the promotion of informed choices for the prevention of cancer, cardiovascular diseases and diabetes.

All of this may be achieved by acting upon the life skills and the resilience of the more sensitive targets through projects, initiatives, provisions and measures that – as mentioned in the 2014-2018 National Prevention Plan[13] – can encourage and support the change in individual lifestyles.

When we talk about preventitive actions we are referring to cross-community strategies and programs aimed at creating not only healthy or healthier lifestyles, but also the construction of environments favorable to the health of the population, both young and old.

[12] See http://www.salute.gov.it/imgs/C_17_pubblicazioni_1595_allegato.pdf

[13] See Ministry of Health, *2014-2018 National Prevention Plan.* http://www.salute.gov.it/portale/news/p3_2_1_1_1.jsp?menu=notizie&p=dalministero&id=1908

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The current state of the art and health trends support the adoption of policies, interventions, action plans and strategies for which today, more than ever, there is an urgent and indispensable need, encouraging the increase of activities aimed at increasing awareness of the problem and, above all, investment in healthcare services to offer prevention, treatment and care, screening initiatives and social interventions. This last aspect, in line with what is observed in international statistics, is necessary because low-income groups are those that are most vulnerable to the social consequences of exposure to risk factors related to lifestyles and behaviors.

For this reason, health prevention and promotion strategies cannot only be health-related. The concept of health in all policies[14] refers to the need for incisive and proactive interventions in various areas (schools, commercial activities, legislation, communication, etc.), aimed at evaluating, preventing, containing and countering the effects of risk factors and disease. In this way, the promotion of awareness and action, at all levels, by the Institutions and the competent Authorities, which contribute to making the social, work and family contexts safer and healthier, is promoted, encouraging conscious and informed responsible health choices. These issues must presently be viewed also in light of the crisis that has impacted our country over the past few years.

The aspects mentioned above will therefore be addressed through the analysis of some issues that are currently problematic for Italy and the definition of improvement strategies (in our country and elsewhere), taking as an example the youth population for alcohol and the elderly population for that of active aging.

3.3.2. People drink less alcohol, but abuse it more

The crisis produces different effects on the health of the population, inevitably influencing the salutogenic habits of people.

The quantity of alcohol consumed in Italy has been in constant decline since the 1960s, and continued to decline in the crisis period at the same rate as the years immediately preceding it (2000-2007). In the general population there is a continual decline in the "risky consumption" of alcohol: more than 40 grams a day for men (4 glasses of wine, or 4 cans of beer, or even 4 glasses of hard liquor) and more than 20 grams a day for women (2 glasses of wine,

[14] See Leppo K., Ollila E., Pena S., Wismar M., & Cook, S. (2013), *Health in all policies-seizing opportunities, implementing policies*, Sosiaali-ja terveysministeriö.

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or 2 cans of beer, or 2 glasses of hard liquor). Nevertheless, in the general population, there is also a continuous decrease in so-called "binge-drinking", intended as 6 drinks of any alcoholic beverage on one occasion). Binge-drinking, on the other hand, has increased among the unemployed, particularly among those who are looking for new jobs. Yet, this takes a different direction if we consider certain population groups.

Moreover, with the crisis, the purchase of foodstuffs has generally declined: less beef is consumed (with a paradoxically beneficial effect on health), but also less fruit, fish, and milk (protective food for many diseases).

Since 2008, the percentage of sedentary people has increased slightly, especially among the less educated, but the overweight trend in the last 10 years has been interrupted: this could be the direct consequence of the reduction in food consumption. With the crisis, as in the rest of the country, some social class differences seem to accentuate, with a prevalence of obesity and greater overweightness among the less educated.

In the study of the inequalities the relationship between social position, unhealthy behavior and health is well documented.

As is known, among the structural determinants[15] health conditions, social class and employment level are considered important factors that account for the social-economic position that individuals occupy in society. On the other hand, we also know that a social health gradient exists, whereby health progressively improves as people's social-economic level increases[16]. Unemployment remains the most worrying phenomenon linked to the crisis, as it is the one that in the short term generates the greatest health effects in terms of increased mental and psychosomatic disorders and unhealthy behavior (e.g. alcoholism and drugs).

In addition to a direct effect, the structural determinants also act indirectly on health, through the impact they have on a set of decisive health intermediaries[17]. The main intermediary determinants include behavioral factors such as smoking, diet, alcohol consumption, and exercise; factors that act

[15] See WHO Commission on Social Determinants of Health and World Health Organization, *Closing the gap in a generation: health equity through action on the social determinants of health*, Commission on Social Determinants of Health final report, World Health Organization, 2008.

[16] See Marmot M., *The health gap: the challenge of an unequal world*, Bloomsbury Publishing, 2015.

[17] See WHO Commission on Social Determinants of Health and World Health Organization, *Closing the gap in a generation: health equity through action on the social determinants of health*, Commission on Social Determinants of Health final report, World Health Organization, 2008.

both by protecting (such as physical exercise) and by damaging (such as cigarette smoking) health.

In 2013[18] both the ISTAT and the PASSI surveillance system indicated a constant decrease in the various forms of alcohol abuse in Italy, following a long-term trend that was only interrupted in the early years of the crisis, between 2008 and 2010, and then resumed in 2011. On the other hand, the same authors point out that with the economic crisis there has been a tendency to increase risk behaviors linked to alcohol consumption among young people (for example, an increase in binge drinking)[19].

Generally speaking, the number of alcohol consumers at risk among young people amounts to 14.1% for men and 8.4% for women, confirming the decreasing trend of the last few years at the national level, even if with a higher amount of binge drinking (21.8% and 7.9% in men and women, respectively, between 19 and 24 years of age). In short, they drink less on the whole, but abuse it more[20].

In an analysis carried out by a working group of the University Cattolica del Sacro Cuore of Rome on the habits and risk behaviors of Italian university students, it emerged that most students said they do not drink or rarely drink wine (50, 1%), other alcoholic beverages (64.4%) (see Table 21) or beer (57.6%); a large percentage of them, however, stated that they drink beer (28.5), wine (32.2%) or alcoholic beverages (18.1%) once or twice a week or even daily (Figure 4)[21].

About 60% of the students participating in the "Health Care" survey said they started drinking alcohol at the age of 16 or even earlier, and 40% of them said they had drunk to excess for the first time in the same period, whereas about 30% said they had drunk alcohol to excess for the first time at the age of 17 or later.

Moreover, 7.7% of the students surveyed said they had drunk more than they should (binge drinking) more than ten times in the last 12 months, while

[18] See Costa G., Marra M. e Salmaso S. (2013), *La salute ai tempi della crisi*, in Giansini G.F., Nicelli A.L., Trabucchi M. e Vanara F. (2013); Rapporto Sanità 2013, *Sistema sanitario e sviluppo del Paese: alcune specificità in tempo di crisi*, Fondazione Smith Kline, Il Mulino.

[19] See Sarti S., Terraneo M., & Tognetti M. (2016), *Stili di vita nell'Italia della crisi: il cambiamento nelle abitudini insalubri secondo le condizioni lavorative*, in IX ESPAnet Italy Conference "Welfare models and Varieties of Capitalism. The challenges to the socio-economic development in Italy and Europe", ESPAnet Università di Macerata.

[20] See Poscia P., Parente P., Frisicale E.M., Teleman A.A., de Waure C. and Di Pietro M.L., *Risky behaviours among university students in Italy*, Ann Ist Super Sanità 2015 | Vol. 51, No. 2: 111-115.

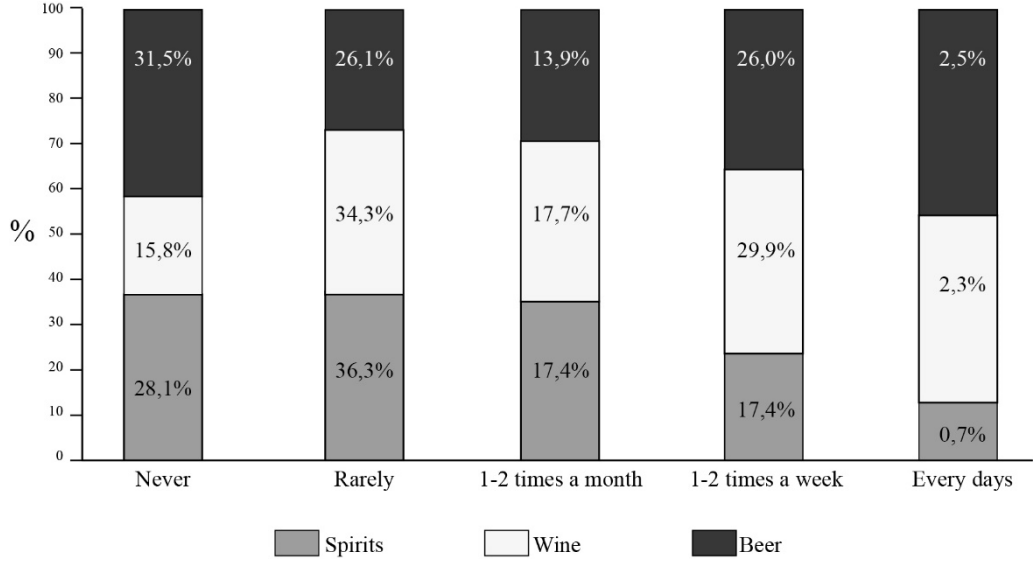
[21] See Poscia P., Parente P., Frisicale E.M., Teleman A.A., de Waure C. and Di Pietro M.L., *Risky behaviours among university students in Italy*, Ann Ist Super Sanità 2015 | Vol. 51, No. 2: 111-115.

Table 21 – Average intake of wine and/or other alcohol by university students (% val.)

Frequency	*Total % (8,500)*	*Sex % (8,499)*		*Socio-economic level % (8397)*				
		M	*F*	*Low*	*Medium-low*	*Average*	*Medium-High*	*High*
– Never	15.8	10.3	18.6	18.7	17.1	16.5	12.8	13.1
– Rarely	34.3	27.7	37.5	37.7	35.3	35.5	31.0	26.6
– 1-2 times a month	17.7	16.5	18.3	15.7	18.9	18.4	16.7	12.7
– 1-2 times a week	29.9	41.1	24.4	24.7	26.8	27.7	37.5	40.5
– Every day	2.3	4.5	1.2	3.1	1.9	1.9	2.1	7.2

Source: Poscia P., Parente P., Frisicale E.M., Teleman A.A., de Waure C. and Di Pietro M.L., *Risky behaviours among university students in Italy.* Ann Italian National Institute of Health 2015 | Vol. 51, No. 2: 111-115

Fig. 4 - Frequency of alcohol consumption, according to the different types of alcohol, among Italian students



Source: Poscia P., Parente P., Frisicale EM. Teleman A.A. de Waure C. and Di Pietro M.L., *Risky behaviours among university students in Italy*. Ann Italian National Institute of Health 2015 | Vol. 51, No. 2: 111-115

25.7% said they have drunk to excess in the last year from at least 2 up to 10 times (see Table 22).

An interesting fact is the prevalence of binge drinking among students who reported living in a good social-economic condition.

Furthermore, the most interesting difference associated with the social-economic status reported by the respondents concerned the percentage of students who consume alcohol on a daily basis. This percentage is significantly higher ($p < 0.01$) among those who claimed to have a high income than those who claimed to have an average or low income.

One of the most worrying problems related to the use of alcohol is road accidents, particularly among young adults: this survey highlights the great risk of students who frequently drive drunk (5%) or under the influence of drugs (2.6%)[22].

Table 22 – Number of drunk episodes in the last year by university students (% val.)

Number	*Total % (8434)*	*Social-economic level % (8332)*				
		Low	*Medium-Low*	*Medium*	*Medium-High*	*High*
– Never	49.3	51.6	51.4	50.9	44.4	41.4
– Once	17.3	19.0	18.1	18.0	15.3	14.8
– 2-3 times	16.6	13.9	17.2	15.5	19.6	19.8
– 4-10 times	9.1	6.5	7.7	8.9	11.1	12.2
– More than 10 times	7.7	8.9	5.6	6.7	9.6	11.8

Source: Poscia P., Parente P., Frisicale E.M., Teleman A.A., de Waure C. and Di Pietro M.L., *Risky behaviours among university students in Italy*. Ann Italian National Institute of Health 2015 | Vol. 51, No. 2: 111-115

3.3.3. The Icelandic model of dealing with abuses[23]

Up until twenty years ago, drug addiction and adolescent alcohol abuse was one of the biggest problems in Iceland. From 1998 to 2016, the percentage of young people aged 15 to 16 who abused alcohol dropped from 48% to 5%, while the percentage that smokes cannabis fell from 17% to 7%. Even cigarette smokers dropped drastically: from 23% to 3%. This decline has led the island's young people to become the healthiest in Europe.

[22] See Poscia P., Parente P., Frisicale E.M., Teleman A.A., de Waure C. and Di Pietro M.L., *Risky behaviours among university students in Italy*, Ann Ist Super Sanità 2015 | Vol. 51, No. 2: 111-115.

[23] See Sigfúsdóttir I.D., et al. *Substance use prevention for adolescents: the Icelandic model*, Health Promotion International 24.1 (2008): 16-25.

Obtaining such a result was only possible thanks to drastic and direct interventions such as the introduction of a curfew, greater collaboration between schools and parents, the introduction of bans and the creation of extracurricular activities involving adolescents full-time[24].

Professor Harvey Milkman, currently a professor at the University of Reykjavik, conducted a nationwide survey of adolescents between 15 and 16 years of age that showed that youths who played sports or attended courses and had a good relationship with their parents were less inclined to use drugs and alcohol. Following this assessment the Icelandic government promoted the "Youth in Iceland" program, which is a national youth rehabilitation and support program directly involving parents and schools. The objectives of this program included the elimination of advertising for cigarettes and alcoholic beverages, prohibiting minors under 18 years of age from buying cigarettes and minors under 20 years of age from buying alcohol. A curfew was introduced for teenagers between the ages of 13 and 18. Family relationships were promoted and extracurricular activities of all kinds were encouraged, from sports to artistic endeavors, to emphasize wellness and social interaction.

In 15 years, from 1997 to 2012, the number of young people engaged in sports doubled, with young people attending courses as many as four times a week. Even the time spent in the family played a crucial role. These actions saw the percentage of those abusing alcohol and drugs dropped drastically.

Youth in Iceland has since evolved into *Youth in Europe*, though the program has only been activated in some small towns of 17 European countries, such as Tarragona (Spain). The costs of maintaining the project, the inability to invest public money in extracurricular activities, the iron discipline that would be "forced" onto young people have in fact led to a repudiation of the *Icelandic model*, despite its proven effectiveness.

3.3.4. Between prevention and promotion of active aging

In Italy there is a rapidly growing and extremely high number of chronically ill patients who will inevitably demand more resources from the NHS. As documented by Istat (2016 data), chronic diseases – from hypertension to diabetes, from COPD to ischemic heart disease – are on the rise and affect almost four out of ten Italians, or about 23.6 million people. In 2013, in fact, 38% of Italians reported being affected by at least one of the main chronic

[24] Ibidem.

diseases, but this figure rose to 39.1% in 2016. According to data provided by general practitioners, in 2015, 23.5% of Italians have at least two chronic diseases and 72% of them take five or more drugs every day.

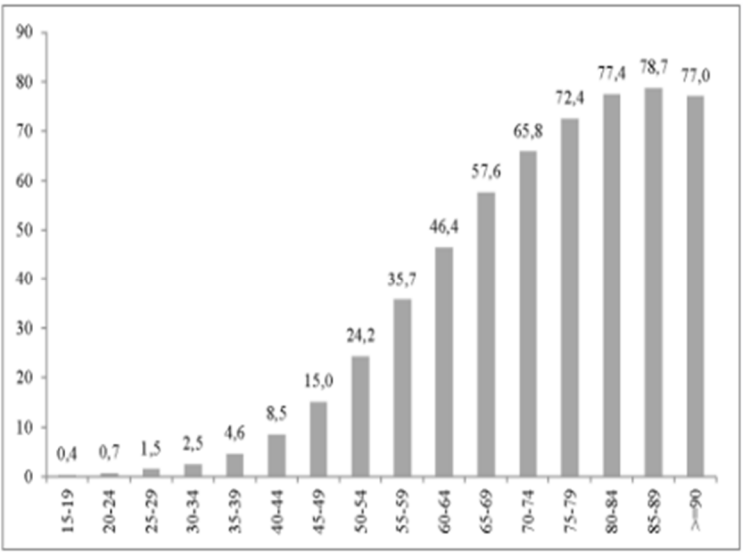
Chronic illnesses and aging among the population are inextricably correlated and the image in Figure 5 shows how strong this relationship is, for example, for arterial hypertension.

For the first time in recent decades there has been a decline in the resident population in Italy, largely due to the negative balance of deaths/births. On the increase (2014 *compared to* 2013), however, is the number of citizens aged 65-74 years: there are 6.5 million of them, or 10.8% of the population, the percentage of the population over 65 will grow at a constant rate for the next 40 years, according to Istat estimates (Figure 6).

The older ones (75-84 years old) and the "very old" ones (over 85) are increasing, while those more than one hundred years old (three for every 10 thousand inhabitants) is declining.

In order for the health system to be sustainable and to respond to the needs of this "new population", new models of prevention must be encouraged and promoted[25].

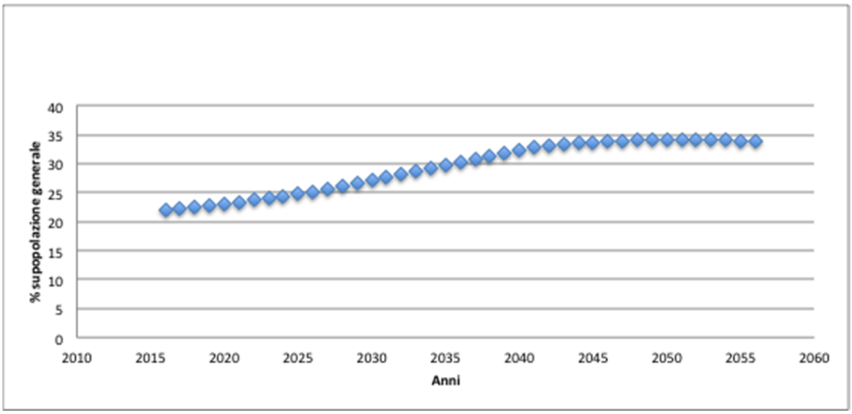
Fig. 5 - Prevalence (values per 100) of hypertension over lifetimes in the network of General Practioners



Source: *Health Search by age group – Year 2015. Osservasalute 2016*

[25] See *Osservasalute 2016.*

Fig. 6 - Percentage of population over 65 out of the general population. Trend 2016-2056



Source: *ISTAT, Author processing*

The future of the sustainability of the NHS depends very much on the chronic illness scenario. And it has already been severely put to the test by severe financial difficulties linked to budget constraints. But, in addition to this unfavorable financial situation there is also great pressure on the system, caused by the increase in the demand for healthcare assistance due to the aging of the population, who are unfortunately not always in good health, and by the production costs also caused by the strong scientific and technological innovation in the health sector.

Moreover, given the decline of family assistance, especially in large cities, and increasing urbanization, there may be an increase in inequality, the collective and individual social burden, and the difficulty in providing assistance to everyone in the best possible way, especially to frail and elderly people.

In terms of chronic illnesses and the elderly, in Europe alone every year 600,000 deaths are due to a sedentary lifestyle, one of the ten main causes of mortality and disability in the world. The wrong lifestyle can have severely debilitating and, in some cases, deadly consequences: diabetes, heart disease, hypertension, cancer and osteoporosis are just a few examples that help us understand the seriousness of the topic.

The European Union and the World Health Organization (WHO) are strongly promoting policies to support Health Enhancing Physical Activity (HEPA). Promoting physical activity for health purposes is essential to counteracting the widespread sedentariness that results in a progressive increase

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in obesity, diabetes and other chronic non-communicable diseases (cardiovascular diseases, chronic respiratory diseases and tumors), and this is particularly important in the elderly population.

These aspects represent a further dimension of the relationship between the financial crisis and health, especially with respect to physical activity.

Italy does very little compared to other European countries to promote healthy physical activity, and has the sad record of being among the European countries with the highest rate of obesity and overweight children. According to the World Health Organization, every citizen pays 300 euros each year to treat overweight or obese Italians (these are about 6 million, with one in three children experiencing problems on the scales). The culture is lacking and there is no clear connotation of the use of public spaces.

Regarding the availability of facilities, there has been an endless debate in Italy as to whether the lack of the propensity of Italians to engage in sports is due to the lack of facilities; even local institutions often complain that the impossibility of promoting sports projects and policies is to be attributed to the scarce availability of sports facilities. The idea that physical activity can be performed outdoors and in existing public spaces, used as if they were 'spontaneous facilities', is less widespread in Italy than in other European countries. European data on the number of athletes who prefer to engage in activities in open spaces show that in many countries this is an already well-defined trend.

It is precisely for this reason that the active aging project is of fundamental importance, as shown by some experiences in Italy and abroad calibrated to the prevention of fragility and the evaluation of the possibility of aging actively and in good health.

3.3.5. The prevention model tested in England [26]

In October 2014, Public Health England (PHE), which is the institution responsible for implementing and implementing Public Health strategies in England, published the document "Everybody Active, Every Day" as a national strategic framework for the promotion of physical activity among the English population. This document is based on a gathering of international evidence and has been shared and promoted by more than 1,000 authors and contributing associations. The strategic document describes the need for co-

[26] See *Public Health England: Everybody Active, Every Day*, 2017.

ordinated actions at the national and international level starting in 4 areas: *Active society, Moving professionals, Active environments, and Moving at scale.* The document also presents, shares and invites others to coordinate the application of some of the more virtuous initiatives, those promoted by UK Active and by the "National Centre for Sports and Exercise Medicine (NCSEM)".

Two years after the systematization of the activities at the national level, the expectation was to obtain minor, even non-significant, results for the population given the scope of the project. The result obtained was better than expected. From 2013 to 2017 there was a progressive increase in the proportion of the English population in the different areas where the project has been put into practice which has achieved the recommended 150 minutes of moderate physical activity every week. The 1% greater than average obtained, tells us that about half a million English people are getting benefits in terms of well-being and health through the implementation of this type of physical activity. This increase occurred in all 9 English regions and in about 60% of the local health authorities involved.

In short, a common effort achieved a great result despite the less-than-optimal forecasts.

Another valuable example can be found in the Sprintt project which carried out a particularly relevant clinical study in Italy aimed at verifying if the risk of becoming disabled can be reduced by intervening on physical frailty and sarcopenia. The Sprintt study assessed the effect of a combined intervention, based, inter alia, on physical activity and proper nutrition recommendations, and that of a lifestyle education program for "healthy" aging. The study will in the future include 1,500 people aged 70 or more with physical frailty and sarcopenia residing in 9 European countries. The study lasts about 3 years and thus more detailed findings will be produced in the years to come.

Sharing good practices for healthy aging through a system of governance that creates clear, structured and measurable prevention strategies might be a factor that certainly benefits both the elderly population and the health and social assistance system in Italy.

Many of the people who are now considered elderly (over 65), by means of physical activity and, more generally, the prevention and care for their own well-being, can represent important mental and physical strengths for the country.

Aging well ensures support for families and partners, means avoiding disablement and disability and thereby costs for our country that can be avoided,

offering multiple and effective opportunities for the whole population. Active aging as set out in the report "The Duty to Become an Active Senior"[27] is good for the country, and prevention is undoubtedly a functional element in this.

[27] See Ermeneia – Studi & Strategie di Sistema, *La responsabilità di diventare un anziano attivo*, per Associazione 50&più, 2017 (edited by Nadio Delai).

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4. The difficulty of attaining reporting that is useful for the reorganization of the system

4.1. The possible "anomalies" that signal the risk of implicit balance sheet coverage

When taking stock of the Italian hospital system each year, this Report also takes into account financial statement data, specifically the Income Statements of the Hospital Centers, in an attempt to give greater transparency to the reporting of public hospitals, as has for some time now been required by current legislation (this legislation and its relative application is discussed in section 4.2. below).

In this regard, the examination conducted this year started from a situation that is characterized as follows:

a) the presence of the effects of two Stability Laws relating to the 2016 and 2017 fiscal years, under which limits were established (with debt repayment targets to be compulsorily pursued and with possible sanctions) for the excessive gap between costs and revenues from healthcare services and co-payment charges. More specifically, we point out that:
   - in the first instance, a limit equal to or greater than 10% of the aforementioned revenues was established and, in absolute terms, equal to or higher than 10 million euros (valid for the 2016 fiscal year);
   - but these limits were lowered to 7% and, in absolute terms, to 7 million euros (valid for the 2017 fiscal year).

   The (obvious) consequence was that of promoting actions by the Hospital Centers, that would be capable – if possible – of readjusting any deviations present back within these limits;
b) in the meantime, the Ministerial Decree concerning "by function" activities and implementing Art. 1, paragraph 526, of the 2016 Stability Law, on the basis of Art. 8-*sexies* of Legislative Decree 502/1992 and subsequent amendments came into effect. This Decree introduced, already for

the 2016 financial statements of the Hospital Centers, the possibility of adopting an "upward" lump-sum enhancement of "by function" activities[1] that could account for up to 30% of revenues from healthcare services and from co-payment charges as well as extra basic levels of assistance contributions: but this increase was calculated not on the basis of revenues as shown in the Income Statement, but on the basis of a greater amount, calculated according to a special formula[2].

It is clear that the entry into force of a lump-sum assessment tool for "by function" activities could (and can) facilitate action on financial statements, in order to make them more compatible with the provisions of the two Stability Laws, which concerned 2016 and 2017, respectively;

c) moreover, it should be said that a special Commission was set up in the Ministry of Health, aimed at defining the general criteria for determining the percentages of flat-rate recognition of the value of "by function" activities, in order to account for how effectively that a corresponding activity was performed by the individual Hospital Centers: all of this was in order to be able to concretely modulate the provision that reads "up to a

[1] This is the Ministerial Decree implementing Art. 1, Paragraph 526 of the 2016 Stability Law, on the basis of Art. 8-*sexies* of Legislative Decree 502/1992, as amended. It states that "the total amount of payment for "by function" activities may not in any case exceed 30% of the already assigned payment limit". Among other things, the 2016 Financial Statements of the Hospital Centers had to incorporate this provision, while the directly managed Hospitals should have incorporated it starting from the 2017 fiscal year. More information is available by looking at the large categories of "by function" activities included in Legislative Decree 502/1992. These are:

- programs that strongly integrate hospital and community care, health and social care, with special reference to lengthy or recurrent chronic illnesses;
- assistance programs with a high degree of customization of the service or the service rendered to the person;
- activities carried out by participating in prevention programs;
- assistance programs for rare diseases;
- activities with significant waiting costs, including the First Aid and emergency transport system;
- experimental assistance programs;
- organ, bone marrow and tissue transplant programs, including maintenance and monitoring of the donor, the removal of organs, transport activities, coordination and organization of the network of removal and transplants, and preliminary testing on donors.

[2] In the event of a maximum increase equal to 30% of "by function" activities, the formula is as follows:

$$\frac{\textit{Revenues for health and social health services + Collections of co-payment charges + Extra basic levels of assistance (LEA) contributions}}{70\%} * 30\%$$

Naturally, if the percentage is less than 30% for the denominator of the formula, the difference to 100 of the aforementioned percentage must be shown.

maximum of 30%", it being understood that the concrete application of these criteria was supposed to/should refer to the individual regional healthcare systems.

But the work of the aforementioned Commission was suspended in the meantime, thus expanding the possibility of applying, with total discretion, the "up to 30%" flat rate of the "by function" activities by each Hospital Center by agreement with the Regional Health Service, thereby making it easier to meet or in any case approach the objectives set by the two Stability Laws for the 2016 and 2017 fiscal years relating to the limiting of the gap between costs and revenues.

It should also be pointed out that the reasons that underlie the processing of the financial statement data by this Report (and in particular the Income Statements of the Hospital Centers) are based on two basic principles:

- that of being able to achieve greater transparency and comparison of financial statements, at least for the Hospital Centers, beyond any adjustments in the final balance: so as to have a clearer and more defined situation from the management point of view and so as to make it possible to distinguish the more efficient healthcare institutions from those that are less efficient;
- and that of identifying any areas of inefficiency that "tie up" rather than "free up" resources, which can be reinvested in restructuring and reorganization of services in order to better serve patients.

Taking account of what has just been mentioned, the assessment was actually carried out as follows:

1) Firstly, Income Statements were selected from 34 (out of 53) Hospital Centers in multiple Regions:
   - 6 in Piedmont;
   - 2 in Veneto;
   - 5 in Emilia Romagna;
   - 2 in Marche;
   - 5 in Lazio;
   - 2 in Apulia;
   - 4 in Calabria;
   - 8 in Sicily.

   These make up 2/3 of the Italian Hospital Centers, of which 13 are located in the North, 7 in Central Italy and 14 in the South.

   This selection, only partially lower than the 82 Hospital Centers examined last year, is linked to the changes that have occurred, especially in Lombardy (which alone had about 35% of the Italian Hospital Centers) following the last reform, which also saw part of the territorial services

be brought into the Centers themselves. The consequence has made it impossible to make comparisons – at least for the moment – with the Hospital Centers of the other Regions, to which is added the fact that some other similar merging operations have been implemented – in terms of consolidating into a single Hospital Center – within the Region of Friuli Venezia Giulia and the Region of Sardinia.
Nevertheless, it may be said that a sufficiently wide and varied range of Hospital Centers and corresponding Regions has been considered;

2) some figures from the Income Statements were then compared, which reveal some (actual or apparent) "anomalies" when they are compared, by means of the Index Numbers, to four years of Income Statements for the Hospital Centers examined, in order to better understand the trend of some specific budget items, specifically[3]:
   - the trend of the number of in-hospital stays compared to the trend of revenues from healthcare services (see Table 23);
   - the trend in the number of in-hospital stays and the trend in costs for the purchase of goods and services (see Table 24);
   - the trend in revenues from "by function" activities and the trend in the percentage of these activities on revenues from services + revenues from co-payment charges as well as the comparison with the percentage of the same "by function" activities, calculated on the basis of the mechanism envisaged by the aforementioned Ministerial Decree (see Table 25);
   - and finally, the performance of the results for the fiscal year, with reference to the four years examined and their impact on revenues from services + co-payment charges (see Table 26);
3) some calculations were subsequently made to highlight areas of potential inefficiency, with reference to the "by function" activities, which the previous Report had begun to utilize and, which may suggest the presence of implicit forms of balance sheet coverage. This brings the result for the fiscal year more in line with the provisions in terms of acceptable deviations between costs and revenues, as specified in particular by the 2016 Stability Law.

[3] The following tables have been prepared using the 2016 Income Statement data from the 34 Hospital Centers, whose respective Financial Statement Reports were considered (see Table Appendix 1 in Section 1 of the Appendices).

Here then we look the first of the tables mentioned, that relating to the comparison between the trend of in-hospital stays and the trend of the corresponding revenues in the four years taken into consideration (Table 23).

The Index Numbers highlight the following phenomena:

a) a tendential decrease in the number of in-hospital stays, that go from 100.0 (I.N. 2013) to 90.5 (I.N. 2016), for all the Hospital Centers considered. However, despite this decrease there is an increase in revenues from healthcare services, which went from 100.0 (I.N. 2013) to 104.4 (I.N. 2016): the 2016 Index Number difference between the trend of revenues and the trend of in-hospital stays, on average, for all the Hospital Centers examined, is equal to 13.9 points.

   And already here, in the overall average, there appears a possible "anomaly": in fact, in-hospital stays decrease – in a consistent manner – while revenues from healthcare services increase. It could be objected that the decrease of the former is nothing more than the explication of a process that has been underway for some time, showing a tendential decrease of hospitalization, which is increasingly used for qualified services, leaving the rest of the demand to be met by outpatient services. This is a consideration to keep in mind, though by itself it is not enough to fully explain the phenomenon;

b) in fact, if we take into consideration the comparison referred to in point a) above, but with reference to the hospitals in the North, Center and South of Italy, we can see how:
   - the difference between the trend in revenues and the trend of in-hospital stays is 3.7 percentage points for the North (yet also with negative differences for leading Centers, such as those in the Veneto Region);
   - it rises to 19.1 points for Central Italy (but with differences of 25 points and more, especially for the Hospital Centers in Lazio);
   - and even reaches 24.4 points in the South (but with differences exceeding 30 points in the Region of Sicily).

   It is clear that the potential objection referred to in point a) above is not enough to explain the data for Regions such as Sicily, Calabria or Lazio: thus, to ascertain the presence of an "anomaly" it becomes natural to at least admit a pronounced and generalized growth in services with high DRGs.

If we compare the trend in the number of in-hospital stays in the four-year period and the trend in the same period of the cost for the purchase of goods and services (see Table 24), a further "possible anomaly" again emerges. In fact:

a) there is a repeat – just as in Table 23 previously – of a divergence between the decrease in the number of in-hospital stays and the parallel increase in the cost for the purchase of goods and services, given that the former decrease over four years from 100.0 to 90.5 (in the Index Numbers), for all the Hospital Centers examined, while the cost for the purchase of goods and services goes from 100.0 in 2013 to 112.2 in 2016.
   It is clear that even in this case there may be explanations for the increase in prices (and this despite the introduction of mechanisms for centralizing purchases and the impact of the spending review, along with, in some cases, the presence of special Commissioners), as well for the improvement of the services provided, with the consequence of also having to increase the quality of the goods and services used (in line with what was observed in the comment regarding Table 23);
b) but even in this case the explanations are not enough if we look at the differences in the Index Numbers relating to the costs for the purchase of goods and services and those relating to in-hospital stays. These differences in fact:
   – amount to an average of 14.6 points more for the North (and 20.4 for Emilia Romagna, 16.4 for Piedmont and -0.6 for Veneto);
   – but rise to 23.7 points for the Centers in Central Italy (with an average of 25.5 points for Lazio);
   – and 29.5 points for the South (with 43.2 points for Sicily).
   Even the comparison of the number of in-hospital stays/purchases of goods and services, therefore, contains items that might present some "anomaly", especially for some Hospital Centers and/or for some regional entities.

The third comparison mentioned previously was then carried out, and is illustrated by the data contained in Table 25 below. It considers a particular entry in the Income Statement, that of revenues conceded to the Hospital Centers for the performance of so-called "by function" activities, for which the percentage out of the revenues from healthcare services + revenues from co-payment charges has also been calculated. But this operation was carried out both on the basis of the values present in the Income Statements and on the basis of the mechanism envisaged by the aforementioned Ministerial Decree: which means that in the first case we achieve a "real" percentage, while in the second case we achieve a "virtual" percentage, in the sense that the latter was calculated from a base reconstructed with the aforementioned mechanism that generates a larger denominator that yields a smaller percentage. The result of this comparison shows:

Table 23 – Comparison of trends for in-hospital stays and corresponding revenues in the four years considered (I.N.: 2013 = 100.0)

Hospital Centers	Number of impatient admissions and day-hospital admissions				Revenues from healthcare services and health-related social health services as per the IS (Cod. A0320)				Index Number difference between Revenues and Admissions
	2013	2014	2015	2016	2013	2014	2015	2016	2016
H.C. 1	100.0	95.2	88.7	87.4	100.0	97.7	99.0	101.8	14.4
H.C. 2	100.0	96.6	111.6	97.6	100.0	100.8	104.9	106.3	8.7
H.C. 3	100.0	95.8	95.8	95.3	100.0	96.8	100.2	102.8	7.5
H.C. 4	100.0	96.5	98.5	98.3	100.0	96.9	100.7	105.6	7.3
H.C. 5	100.0	95.3	98.3	90.1	100.0	94.9	94.9	98.8	8.7
H.C. 6	100.0	84.1	95.0	94.7	100.0	97.9	100.3	99.9	5.2
Piedmont Total	**100.0**	**90.7**	**97.4**	**94.5**	**100.0**	**97.7**	**100.4**	**102.0**	**7.5**
H.C. 7	100.0	98.6	107.6	105.4	100.0	98.0	99.3	99.8	-5.6
H.C. 8	100.0	100.9	115.1	125.3	100.0	101.9	108.7	112.4	-12.9
Veneto Total	**100.0**	**99.8**	**111.3**	**115.2**	**100.0**	**99.9**	**103.9**	**105.9**	**-9.3**
H.C. 9	100.0	98.9	99.0	98.4	100.0	102.0	103.4	104.1	5.7
H.C. 10	100.0	97.7	96.7	96.0	100.0	100.7	101.0	101.6	5.6
H.C. 11	100.0	96.7	95.5	94.0	100.0	99.7	99.8	99.4	5.4
H.C. 12	100.0	97.9	97.2	98.4	100.0	101.0	101.6	104.1	5.7
H.C. 13	100.0	98.8	97.9	96.3	100.0	101.9	102.3	101.8	5.5
Emilia Romagna Total	**100.0**	**98.0**	**97.3**	**97.0**	**100.0**	**101.1**	**101.7**	**102.6**	**5.6**
NORTH ITALY TOTAL	**100.0**	**95.4**	**100.0**	**99.4**	**100.0**	**99.6**	**101.7**	**103.1**	**3.7**
H.C. 14	100.0	99.3	94.2	92.1	100.0	95.4	93.1	95.8	3.7
H.C. 15	100.0	97.4	93.6	93.8	100.0	93.6	92.6	97.6	3.8
Marche Total	**100.0**	**98.1**	**93.8**	**93.2**	**100.0**	**94.2**	**92.8**	**96.9**	**3.7**
H.C. 16	100.0	96.6	78.0	69.7	100.0	98.7	96.3	92.7	23.0
H.C. 17	100.0	91.2	86.0	77.7	100.0	93.2	106.1	103.3	25.6
H.C. 18	100.0	93.7	80.1	74.7	100.0	95.8	98.9	99.3	24.6
H.C. 19	100.0	97.9	83.9	77.9	100.0	100.1	103.6	103.6	25.7
H.C. 20	100.0	102.6	90.4	86.1	100.0	104.9	111.6	114.4	28.3
Lazio Total	**100.0**	**96.2**	**82.6**	**76.2**	**100.0**	**98.3**	**102.0**	**101.4**	**25.2**
CENTRAL ITALY TOTAL	**100.0**	**96.7**	**85.7**	**80.9**	**100.0**	**97.1**	**99.2**	**100.0**	**19.1**

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(Continued) *Table 23 – Comparison of trends for in-hospital stays and corresponding revenues in the four years considered (I.N.: 2013 = 100.0)*

Hospital Centers	Number of impatient admissions and day-hospital admissions				Revenues from healthcare services and health-related social health services as per the IS (Cod. A0320)				Index Number difference between Revenues and Admissions
	2013	2014	2015	2016	2013	2014	2015	2016	2016
H.C. 21	100.0	95.0	89.3	88.8	100.0	101.9	105.9	99.5	10.7
H.C. 22	100.0	93.3	89.2	88.4	100.0	100.0	105.8	99.0	10.6
Apulia Total	**100.0**	**94.4**	**89.3**	**88.7**	**100.0**	**101.2**	**105.9**	**99.3**	**10.6**
H.C. 23	100.0	94.2	92.6	100.2	100.0	99.1	98.6	119.7	19.5
H.C. 24	100.0	95.2	94.3	88.9	100.0	100.2	100.4	111.0	22.1
H.C. 25	100.0	95.4	95.8	95.6	100.0	100.4	102.0	114.3	18.7
H.C. 26	100.0	94.0	92.1	86.7	100.0	99.0	98.0	103.6	16.9
Calabria Total	**100.0**	**94.6**	**93.3**	**92.4**	**100.0**	**99.6**	**99.3**	**111.9**	**19.5**
H.C. 27	100.0	83.4	78.9	85.3	100.0	96.3	102.9	102.9	17.6
H.C. 28	100.0	84.2	80.7	94.4	100.0	97.2	105.1	113.9	19.5
H.C. 29	100.0	87.2	84.9	94.1	100.0	100.6	110.6	113.6	19.5
H.C. 30	100.0	83.0	76.4	84.9	100.0	95.9	99.5	102.5	17.6
H.C. 31	100.0	90.1	89.6	102.8	100.0	104.0	116.7	124.1	21.3
H.C. 32	100.0	85.0	80.8	n. a.	100.0	98.2	105.3	110.4	n. a.
H.C. 33	100.0	86.1	76.5	88.0	100.0	99.5	99.7	106.2	18.2
H.C. 34	100.0	86.5	89.3	113.7	100.0	99.9	116.3	137.1	23.4
Sicily Total	**100.0**	**85.8**	**82.2**	**81.6**	**100.0**	**99.1**	**107.1**	**113.8**	**32.2**
SOUTH ITALY TOTAL	**100.0**	**89.8**	**86.2**	**85.6**	**100.0**	**99.7**	**105.5**	**110.0**	**24.4**
OVERALL TOTAL	**100.0**	**93.7**	**92.0**	**90.5**	**100.0**	**99.1**	**102.3**	**104.4**	**13.9**

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table 24 – Comparison of trends for the number of in-hospital stays and costs for the purchase of goods and services in the four years considered (I.N.: 2013 = 100.0)

Hospital Centers	Number of impatient admissions and day-hospital admissions				Cost for the Purchase of Goods and services (Cod. BA010)				Index Number difference between costs for the Purchase of Goods and services, and admissions
	2013	2014	2015	2016	2013	2014	2015	2016	2016
H.C. 1	100.0	95.2	88.7	87.4	100.0	99.1	110.8	119.1	31.7
H.C. 2	100.0	96.6	111.6	97.6	100.0	105.4	120.5	123.8	26.2
H.C. 3	100.0	95.8	95.8	95.3	100.0	99.2	105.0	110.5	15.2
H.C. 4	100.0	96.5	98.5	98.3	100.0	95.1	100.9	113.0	14.7
H.C. 5	100.0	95.3	98.3	90.1	100.0	95.8	102.5	106.6	16.5
H.C. 6	100.0	84.1	95.0	94.7	100.0	96.8	106.3	105.9	11.2
Piedmont Total	**100.0**	**90.7**	**97.4**	**94.5**	**100.0**	**98.1**	**107.5**	**110.9**	**16.4**
H.C. 7	100.0	98.6	107.6	105.4	100.0	96.3	109.1	107.1	1.7
H.C. 8	100.0	100.9	115.1	125.3	100.0	105.1	126.3	124.8	-0.5
Veneto Total	**100.0**	**99.8**	**111.3**	**115.2**	**100.0**	**100.0**	**116.4**	**114.6**	**-0.6**
H.C. 9	100.0	98.9	99.0	98.4	100.0	107.5	103.5	111.0	12.6
H.C. 10	100.0	97.7	96.7	96.0	100.0	101.2	101.7	107.8	11.8
H.C. 11	100.0	96.7	95.5	94.0	100.0	103.7	110.9	114.2	20.2
H.C. 12	100.0	97.9	97.2	98.4	100.0	105.7	136.6	128.6	30.2
H.C. 13	100.0	98.8	97.9	96.3	100.0	102.8	118.5	113.6	17.3
Emilia Romagna Total	**100.0**	**98.0**	**97.3**	**97.0**	**100.0**	**104.8**	**117.9**	**117.4**	**20.4**
NORTH ITALY TOTAL	**100.0**	**95.4**	**100.0**	**99.4**	**100.0**	**100.8**	**113.3**	**114.0**	**14.6**
H.C. 14	100.0	99.3	94.2	92.1	100.0	103.2	107.9	110.3	18.2
H.C. 15	100.0	97.4	93.6	93.8	100.0	103.6	116.7	114.7	20.9
Marche Total	**100.0**	**98.1**	**93.8**	**93.2**	**100.0**	**103.4**	**113.8**	**113.2**	**20.0**
H.C. 16	100.0	96.6	78.0	69.7	100.0	100.9	98.9	95.2	25.5
H.C. 17	100.0	91.2	86.0	77.7	100.0	98.1	110.6	116.1	38.4
H.C. 18	100.0	93.7	80.1	74.7	100.0	98.3	104.8	102.5	27.8
H.C. 19	100.0	97.9	83.9	77.9	100.0	107.6	104.6	107.8	29.9
H.C. 20	100.0	102.6	90.4	86.1	100.0	105.2	103.6	96.6	10.5
Lazio Total	**100.0**	**96.2**	**82.6**	**76.2**	**100.0**	**101.5**	**103.9**	**101.7**	**25.5**
CENTRAL ITALY TOTAL	**100.0**	**96.7**	**85.7**	**80.9**	**100.0**	**102.0**	**106.4**	**104.6**	**23.7**

(Continued) *Table 24 – Comparison of trends for the number of in-hospital stays and costs for the purchase of goods and services in the four years considered (I.N.: 2013 = 100.0)*

Hospital Centers	Number of impatient admissions and day-hospital admissions				Cost for the Purchase of Goods and services (Cod. BA010)				Index Number difference between costs for the Purchase of Goods and services, and admissions
	2013	2014	2015	2016	2013	2014	2015	2016	2016
H.C. 21	100.0	95.0	89.3	88.8	100.0	97.4	112.6	97.4	8.6
H.C. 22	100.0	93.3	89.2	88.4	100.0	108.5	114.4	102.7	14.3
Apulia Total	**100.0**	**94.4**	**89.3**	**88.7**	**100.0**	**100.9**	**113.1**	**99.1**	**10.4**
H.C. 23	100.0	94.2	92.6	100.2	100.0	97.7	105.1	109.8	9.6
H.C. 24	100.0	95.2	94.3	88.9	100.0	93.8	108.5	104.4	15.5
H.C. 25	100.0	95.4	95.8	95.6	100.0	95.3	96.4	99.0	3.4
H.C. 26	100.0	94.0	92.1	86.7	100.0	108.1	107.4	113.0	26.3
Calabria Total	**100.0**	**94.6**	**93.3**	**92.4**	**100.0**	**99.2**	**105.1**	**107.4**	**15.0**
H.C. 27	100.0	83.4	78.9	85.3	100.0	101.8	107.7	113.4	28.1
H.C. 28	100.0	84.2	80.7	94.4	100.0	105.3	127.4	129.3	34.9
H.C. 29	100.0	87.2	84.9	94.1	100.0	104.5	124.9	125.3	31.2
H.C. 30	100.0	83.0	76.4	84.9	100.0	105.8	114.1	116.2	31.3
H.C. 31	100.0	90.1	89.6	102.8	100.0	105.7	141.6	139.1	36.3
H.C. 32	100.0	85.0	80.8	n. a.	100.0	105.9	116.8	113.0	n. a.
H.C. 33	100.0	86.1	76.5	88.0	100.0	103.6	102.1	109.9	21.9
H.C. 34	100.0	86.5	89.3	113.7	100.0	111.9	149.2	156.7	43.0
Sicily Total	**100.0**	**85.8**	**82.2**	**81.6**	**100.0**	**105.5**	**122.6**	**124.8**	**43.2**
SOUTH ITALY TOTAL	**100.0**	**89.8**	**86.2**	**85.6**	**100.0**	**103.2**	**117.2**	**115.1**	**29.5**
OVERALL TOTAL	**100.0**	**93.7**	**92.0**	**90.5**	**100.0**	**101.8**	**112.9**	**112.2**	**21.7**

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

a) first of all, an increase in the value reported in the financial statements for the "by function" activities for all the Hospital Centers considered, given that, in the period 2013-2016, the overall average Index Number relating to the revenues of these activities increased from 100.0 to 108.6, with some intermediate points of 112.5 (for 2014) and 109.8 (for 2015). But the situation may appear different, if we consider:
   - the average situation in the North, which sees an increase in the Index Number from 100.0 in 2013 to 123.6 in 2016: with peaks of 149.8 for Veneto, which nevertheless finds an explanation in the concentration of 5 Regional Specialist Centers within one of the two Hospital Centers in Table 25, but also with an increase to 124.8 for the other Center; and this also applies to one of the Centers in the Region of Emilia Romagna, which more than doubled its "by function" activities between 2013 and 2016 (from 100.0 to 232.2);
   - the average situation for Central Italy shows a slight increase in the Index Number, which rose from 100.0 to 102.1, but with peaks of 118.5 in 2014 and 105.9 in 2015: with a particular upward trend for the Hospital Centers in Marche and, on the contrary, with a substantial decrease for almost all the Hospital Centers in Lazio;
   - the average situation in the South, which has a decreasing Index Number over the four-year period, falling from 100.0 in 2013 to 97.7 in 2016, but with an upward trend even in this case of 112.5 in 2014 and 109.4 in 2015.

   It is quite evident that the "by function" activity entry, capable of including an extremely wide variety of services[4], can reflect both an effective and qualifying increase of the latter but can also lend itself to some form of implicit coverage of the inefficiencies of the individual Hospital Center;
b) confirming the aforementioned data set, Table 25 shows the percentage of "by function" activities out of total revenues from services + revenue from co-payment charges. As can be seen, in 2016, the Centers considered show an average incidence of 39.0%: this means that the revenues from the "by function" activities represent a significant amount compared to the typical activities of the Hospital Centers, that is, with respect to the revenues from healthcare services + revenues from co-payment charges. And it is quite logical that a balance sheet item of this size can not properly illustrate (and with sufficient transparency) the balance sheet it-

[4] See previous Note 1.

*Table 25 – Trend of revenues for "by function activities" (I.N.: 2013 = 100.0) and comparison of the incidence of "by function activities" on revenues for services + revenues from co-payment charges and incidence of the same, but calculated according to the provisions of the specific Ministerial Decree**

Hospital Centers	Revenues for "by function" activities as per the I.S. (Code AA0030)				Percentage of "by function" activities out of revenues for services + revenues from co-payment charges				Percentage of "by function" activities, calculated using the Ministerial Decree mechanism			
	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016
H.C. 1	100.0	86.2	94.1	111.5	33.6	29.6	31.9	36.8	25.1	22.9	24.2	26.9
H.C. 2	100.0	103.4	115.7	140.3	34.0	34.8	37.5	45.1	25.3	25.8	27.3	31.1
H.C. 3	100.0	101.0	102.9	112.4	26.7	27.9	27.5	29.3	21.1	21.8	21.5	22.6
H.C. 4	100.0	96.3	104.9	116.1	39.7	39.4	41.3	43.7	28.4	28.3	29.3	30.4
H.C. 5	100.0	112.0	111.8	136.6	29.2	34.4	34.3	40.4	22.6	25.6	25.6	28.8
H.C. 6	100.0	97.4	98.8	100.7	66.1	65.7	65.2	66.9	39.8	39.6	39.5	40.1
Piedmont Total	**100.0**	**98.4**	**102.0**	**110.1**	**46.7**	**46.9**	**47.5**	**50.6**	**31.8**	**31.9**	**32.2**	**33.6**
H.C. 7	100.0	147.4	144.8	175.6	22.0	33.0	32.0	38.7	18.0	24.8	24.2	27.9
H.C. 8	100.0	110.8	134.2	124.8	24.2	26.3	29.9	26.9	19.5	20.8	23.0	21.2
Veneto Total	**100.0**	**128.8**	**139.4**	**149.8**	**23.1**	**29.7**	**30.9**	**32.6**	**18.7**	**22.9**	**23.6**	**24.6**
H.C. 9	100.0	131.1	115.3	121.6	15.9	20.4	17.7	18.6	13.7	17.0	15.1	15.7
H.C. 10	100.0	97.0	105.1	105.1	13.9	13.4	14.5	14.4	12.2	11.8	12.6	12.6
H.C. 11	100.0	127.4	132.6	132.6	16.2	20.7	21.5	21.5	13.9	17.1	17.7	17.7
H.C. 12	100.0	117.1	109.2	120.1	17.5	20.4	18.9	20.3	14.9	16.9	15.9	16.9
H.C. 13	100.0	210.6	231.7	232.2	17.9	37.0	40.5	40.8	15.2	27.0	28.8	29.0
Emilia Romagna Total	**100.0**	**133.6**	**133.0**	**138.0**	**16.4**	**21.7**	**21.5**	**22.1**	**14.1**	**17.8**	**17.7**	**18.1**
NORTH ITALY TOTAL	**100.0**	**111.8**	**115.8**	**123.6**	**29.2**	**32.8**	**33.3**	**35.1**	**22.6**	**24.7**	**25.0**	**26.0**
H.C. 14	100.0	117.7	111.1	128.3	36.4	44.9	43.4	48.6	26.7	31.0	30.3	32.7
H.C. 15	100.0	124.5	139.4	129.1	25.9	34.4	39.0	34.3	20.6	25.6	28.0	25.5
Marche Total	**100.0**	**121.5**	**127.1**	**128.7**	**29.6**	**38.2**	**40.5**	**39.3**	**22.9**	**27.6**	**28.8**	**28.2**
H.C. 16	100.0	116.0	88.8	76.5	24.3	28.6	22.5	20.2	19.6	22.2	18.4	16.8
H.C. 17	100.0	141.8	97.5	81.2	16.8	25.6	15.5	13.3	14.4	20.4	13.4	11.7
H.C. 18	100.0	111.8	89.2	85.7	29.0	33.8	26.2	25.1	22.5	25.3	20.8	20.0
H.C. 19	100.0	123.2	103.1	95.9	14.2	17.5	14.2	13.2	12.4	14.9	12.4	11.6
H.C. 20	100.0	112.5	109.0	108.9	17.9	19.3	17.6	17.2	15.2	16.1	14.9	14.6
Lazio Total	**100.0**	**116.8**	**93.8**	**86.9**	**22.4**	**26.6**	**20.7**	**19.3**	**18.3**	**21.0**	**17.1**	**16.2**
CENTRAL ITALY TOTAL	**100.0**	**118.5**	**105.9**	**102.1**	**24.6**	**30.0**	**26.3**	**25.2**	**19.7**	**23.1**	**20.8**	**20.1**

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(Continued) *Table 25 – Trend of revenues for "by function activities" (I.N.: 2013 = 100.0) and comparison of the incidence of "by function activities" on revenues for services + revenues from co-payment charges and incidence of the same, but calculated according to the provisions of the specific Ministerial Decree**

Hospital Centers	Revenues for "by function" activities as per the I.S. (Code AA0030)				Percentage of "by function" activities out of revenues for services + revenues from co-payment charges				Percentage of "by function" activities, calculated using the Ministerial Decree mechanism			
	2013	**2014**	**2015**	**2016**	**2013**	**2014**	**2015**	**2016**	**2013**	**2014**	**2015**	**2016**
H.C. 21	100.0	117.1	97.4	96.5	52.6	60.6	48.5	51.3	34.5	37.7	32.7	33.9
H.C. 22	100.0	103.6	93.2	92.8	47.1	48.8	41.6	44.3	32.0	32.8	29.4	30.7
Apulia Total	**100.0**	**112.7**	**96.0**	**95.3**	**50.7**	**56.4**	**46.0**	**48.8**	**33.6**	**36.1**	**31.5**	**32.8**
H.C. 23	100.0	99.4	100.9	78.6	84.3	84.6	86.4	55.6	45.8	45.8	46.4	35.7
H.C. 24	100.0	98.1	96.9	100.2	69.2	67.8	66.8	62.6	40.9	40.4	40.1	38.5
H.C. 25	100.0	96.6	69.7	20.2	39.4	38.1	27.1	7.1	28.3	27.6	21.3	6.6
H.C. 26	100.0	100.0	98.4	87.5	66.5	67.1	66.7	56.3	40.0	40.2	40.0	36.0
Calabria Total	**100.0**	**99.0**	**97.0**	**83.6**	**69.6**	**69.3**	**68.1**	**52.2**	**41.0**	**40.9**	**40.5**	**34.3**
H.C. 27	100.0	106.6	106.2	106.5	53.3	59.1	55.2	55.3	34.8	37.1	35.5	35.6
H.C. 28	100.0	112.5	104.1	104.7	45.4	52.6	45.0	41.8	31.2	34.5	31.0	29.5
H.C. 29	100.0	102.1	106.1	103.8	62.7	63.7	60.3	57.5	38.5	38.9	37.6	36.5
H.C. 30	100.0	130.8	111.1	100.2	86.3	117.8	96.4	84.6	46.3	54.1	49.1	45.8
H.C. 31	100.0	99.8	95.0	94.4	47.8	45.9	39.0	36.6	32.3	31.5	28.1	26.8
H.C. 32	100.0	112.5	104.5	93.2	73.4	84.1	72.9	62.1	42.3	45.7	42.2	38.3
H.C. 33	100.0	114.3	112.8	101.8	89.7	103.3	101.7	86.2	47.3	50.8	50.4	46.3
H.C. 34	100.0	151.9	150.2	128.0	50.1	76.2	64.9	47.0	33.4	43.3	39.4	32.0
Sicily Total	**100.0**	**114.7**	**110.4**	**102.9**	**63.6**	**73.7**	**65.7**	**57.8**	**38.9**	**42.4**	**39.7**	**36.6**
SOUTH ITALY TOTAL	**100.0**	**111.3**	**105.0**	**97.7**	**61.5**	**68.7**	**61.3**	**54.9**	**38.1**	**40.7**	**38.0**	**35.4**
OVERALL TOTAL	**100.0**	**112.5**	**109.4**	**108.6**	**37.3**	**42.4**	**40.0**	**39.0**	**27.2**	**29.8**	**28.6**	**28.0**

(*) Ministerial Decree implementing Art. 1, paragraph 526 of the 2016 Stability Law, starting from Art. 8-*sexies* of Legislative Decree 502/1992 and subsequent amendments.

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

self. But the average of 39.0% also sees internal differentiation varying among the different territories. Suffice it to consider that:

- in the North, the average percentage is 35.1%, but with peaks for some Centers of 45.1% or even 66.9% in Piedmont, 38.7% in the Region of Veneto, and 40.8% in Emilia Romagna;
- this average percentage fell to 25.2% for Centers in Central Italy with a dip downward to 19.3% for Lazio and a peak upward to 48.6% for a Hospital Center in Marche;
- but the average incidence of 35.1% rises to 54.9% for the South, with particularly high peaks within the Centers of Calabria (up to 62.6% for one of them) and Sicily (with situations that not only exceed 60%, but even 80% in some specific cases).

If it is quite clear that a balance sheet item covering roughly 40% of healthcare production + co-payment charges is already too high to guarantee a minimum of budget transparency, by going up to more than 60% or even more than 80% a clear "anomaly" is created;

c) it should also be noted that in many cases the percentage of "by function" activities out of revenues for services + revenues for co-payment charges has almost always increased over the four-year period for the Hospital Centers in the various Regions, but above all there has been a pronounced growth trend of this incidence in the intermediate years 2014 and 2015, probably due to the effort to improve the relative financial statements;

d) finally, it is interesting to consider the last data group of Table 25, in which the percentage of the value shown on the balance sheet for "by function" activities was recalculated, applying the "generous" criterion of the Ministerial Decree, which however defines a maximum flat rate limit of 30% for those Hospital Centers that have actually carried out particularly numerous and high quality activities. As can be seen, the percentages shown are, thanks to the aforementioned mechanism, lower than those taken into consideration in the second data group of Table 25, with the consequence:
   - of being on average 26.0% in the North (but with peaks of 33.6% in Piedmont, thus exceeding the limit of 30% in at least 3 Hospital Centers in the Region);
   - of being 20.1% for Central Italy (but exceeding the limit set by the Ministerial Decree for a Hospital Center in Marche which reached 32.7%);
   - of being 35.4% for the South: with an overrun of the 30% limit in Apulia (32.8%), Calabria (34.3%), and in Sicily (36.6%)

   Add to this the fact that the percentage of "by function" activities tends to increase over the four years considered with regard to the situation in

the North and the Region of Marche, while it tends to decrease (at least in the final years of the four-year period) substantially for the rest of Central and South Italy. But often there is a great increase in the intermediate years (2014 and 2015), confirming the probable attempt to achieve new and better financial statement balances.

Thus, there can be seen overall an excessively high value of the "by function" activity compared to the revenues from healthcare services + co-payment charges and this is particularly true for the South and for some Northern Hospital Centers: although we must take into account that this value can be an expression of both services with high added value for patients and implicit methods of budget coverage.

Finally, Table 26 shows the operating results for the Hospital Centers in the four years taken into consideration, as well as the impact of these results on revenues from services + revenue from co-payment charges. The following reflections can be made about this:

a) the perfect costs/revenues equilibrium of some Regions is striking due to its improbability on any balance sheet (public or private): which suggests an adjustment of the items in the preparation of the final balance sheet. But this does not mean that we are always witnessing an "improper" method, even if we are led to assume at least the existence of some compensatory support in terms of revenues (precisely through the "by function" activity entry) by the respective regional healthcare system;
b) as for the other Hospital Centers that show an imperfect equilibrium between costs and revenues, we can detect an effort to rebalance the budget, given the decrease in the deficit between 2013 and 2016 (by the Regions in the North). Whereas for Lazio there is a slight decrease in the four-year period, but with the explication of huge deficits and, in one specific instance, even an increase: this situation is an outright contradiction to the other Regions, perhaps also due to the action of the commissioner, who probably preferred to expose the true deficit situation. In the South, apart from Sicily, the negative results have been made explicit for a few individual Hospital Centers in Apulia and Calabria in particular.

Overall, the percentage of the deficits shown in Table 4, excluding Lazio, is well below the 7% envisaged by the 2016 Stability Law.

Following the examination of some possible "anomalies", some estimates have also been made, starting from the value attributed to the "by function" activities, which – as assumed in the simulations prepared in the 2016 Report, in anticipation of the entry into force of the Ministerial Decree mentioned previously in notes 1 and 2 – may include improper extra-revenues that then become implicit forms of budget coverage.

Table 26 – Operating results of the Hospital Centers in the four years considered (in thousands of euros)

Hospital Centers	Operating results (A.V.)				Percentage of the operating results (+/-) on revenues from services + co-payment charges			
	2013	2014	2015	2016	2013	2014	2015	2016
H.C. 1	0	- 10,147	0	0	0.0	-9.5	0.0	0.0
H.C. 2	- 5,990	- 12,852	- 18,864	- 6,428	-3.2	-6.8	-9.6	-3.2
H.C. 3	0	- 5,619	0	**1,713**	0.0	-3.2	0.0	0.9
H.C. 4	0	- 5,737	- 4,486	**2,403**	0.0	-3.8	-2.8	1.5
H.C. 5	0	- 8,432	- 6,568	**1,801**	0.0	-6.8	-5.3	1.4
H.C. 6	- 12,750	- 30,648	- 15,081	0	-2.3	-5.6	-2.7	0.0
Piedmont Total	***- 18,740***	***- 73,435***	***- 44,999***	***- 511***	***-1.4***	***-5.7***	***-3.4***	***0.0***
H.C. 7	- 25,609	- 22,835	- 17,047	- 10,491	-6.0	-5.4	-4.0	-2.5
H.C. 8	- 24,950	- 13,451	**1,000**	**490**	-6.2	-3.3	0.2	0.1
Veneto Total	***- 50,559***	***- 36,286***	***- 16,047***	***- 10,001***	***-6.1***	***-4.4***	***-1.9***	***-1.1***
H.C. 9	0	0	0	0	0.0	0.0	0.0	0.0
H.C. 10	0	0		0	0.0	0.0	0.0	0.0
H.C. 11	0	0	0	0	0.0	0.0	0.0	0.0
H.C. 12	0	0	0	0	0.0	0.0	0.0	0.0
H.C. 13	0	0	0	0	0.0	0.0	0.0	0.0
Emilia Romagna Total					***0.0***	***0.0***	***0.0***	***0.0***
NORTH ITALY TOTAL	**- 69,299**	**- 109,721**	**- 61,046**	**- 10,512**	**-2.0**	**-3.1**	**-1.7**	**-0.3**
H.C. 14	0	0	0	0	0.0	0.0	0.0	0.0
H.C. 15	0	0	0	**2,582**	0.0	0.0	0.0	0.9
Marche Total	***0***	***-***	***-***	***2,582***	***0.0***	***0.0***	***0.0***	***0.6***
H.C. 16	- 151,274	- 158,632	- 161,799	- 155,718	-60.9	-64.8	-67.9	-68.0
H.C. 17	- 91,594	- 102,291	- 98,853	- 81,733	-71.8	-85.9	-73.3	-62.3
H.C. 18	- 77,273	- 74,610	- 92,543	- 140,252	-23.4	-23.6	-28.5	-42.9
H.C. 19	- 102,291	- 53,708	- 54,160	- 49,108	-74.5	-39.2	-38.3	-34.7
H.C. 20	- 55,349	- 73,601	- 62,567	- 41,794	-31.7	-40.4	-32.3	-21.1
Lazio Total	***- 477,781***	***- 462,842***	***- 469,922***	***- 468,605***	***-46.9***	***-46.3***	***-45.5***	***-45.7***
CENTRAL ITALY TOTAL	***- 477,781***	***- 462,842***	***- 469,922***	***- 466,023***	**-32.8**	**-32.8**	**-32.6**	**-32.1**

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(Continued) *Table 26 – Operating results of the Hospital Centers in the four years considered (in thousands of euros)*

Hospital Centers	Operating results (A.V.)				Percentage of the operating results (+/-) on revenues from services + co-payment charges			
	2013	2014	2015	2016	2013	2014	2015	2016
H.C. 21	0	0	- 28,102	- 19,736	0.0	0.0	-8.7	-6.5
H.C. 22	0	0	0	0	0.0	0.0	0.0	0.0
Apulia Total	***0***	***-***	***- 28,102***	***- 19,736***	***0.0***	***0.0***	***-5.6***	***-4.2***
H.C. 23	- 4,584	- 6,007	- 1,880	0	-4.6	-6.1	-1.9	0.0
H.C. 24	- 1,682	- 3,764	- 2,265	-	-1.7	-3.9	-2.3	0.0
H.C. 25	- 15,516	- 14,562	- 29,858	- 42,000	-41.2	-38.7	-78.3	-98.8
H.C. 26	0	0	0	0	0.0	0.0	0.0	0.0
Calabria Total	***- 21,782***	***- 24,333***	***- 34,003***	***- 42,000***	***-6.6***	***-7.4***	***-10.3***	***-11.4***
H.C. 27	0	0	0	0	0.0	0.0	0.0	0.0
H.C. 28	0	0	0	0	0.0	0.0	0.0	0.0
H.C. 29	0	788	0	0	0.0	0.4	0.0	0.0
H.C. 30	0	0	0	0	0.0	0.0	0.0	0.0
H.C. 31	0	0	0	0	0.0	0.0	0.0	0.0
H.C. 32	0	2,456	2,680	0	0.0	1.6	1.6	0.0
H.C. 33	0	0	0	0	0.0	0.0	0.0	0.0
H.C. 34	0	2209	0	1120	0.0	1.8	0.0	0.7
Sicily Total	***-***	***5,453***	***2,680***	***1,120***	***0.0***	***0.5***	***0.2***	***0.1***
SOUTH ITALY TOTAL	**- 21,782**	**- 18,880**	**- 59,425**	**- 60,616**	**-1.1**	**-1.0**	**-2.9**	**-2.8**
OVERALL TOTAL	**- 568,862**	**- 591,443**	**- 590,393**	**- 537,151**	**-8.2**	**-8.6**	**-8.3**	**-7.4**

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

As detailed in Section 1 of the Appendices, we proceeded as follows (with reference to 2016 data):

- first of all, the number of "by function" activities was assessed, which exceeds 30% of revenues from healthcare services + co-payment charges, calculated on the basis of the Ministerial Decree referred to previously in notes 1 and 2: this was done both for the 34 Centers examined and – through the use of a specific projection – for the other 29 Hospital Centers, attaining a total value of EUR 643 million;
- then the potential extra-revenues were estimated, which may in any event be reasonably present within the "by function" activity values, even if purged from the amount exceeding the 30% limit envisaged by the Ministerial Decree: for this was applied the criterion already used in the *Health&Hospitals/2016* Report, hypothesizing a sort of differentiation of between 20% and 30% for the total of "by function" activities: this was done both for the 34 Hospital Centers examined and – through the use of a specific projection – for the remaining 29 Hospital Centers, attaining a total value between EUR 421 and 848 million;
- to these estimates were then added the overall budget deficits declared for the year 2016 of all 53 Hospital Centers, which amount to EUR 539 million.

At this point, the sum of the above figures makes it possible to establish a differentiation of possible extra-revenues for the Italian Hospital Centers as a whole of between EUR 1,603 and 2,030 million.

Assuming then the potential for projecting this estimate on all of the directly managed Hospitals, the same differentiation was used (in a prudential manner), even attributing to the directly managed Hospitals twice the value for hospital system production (Hospitalizations + Co-payment charges + File f, etc.) than to the Hospital Centers: here, the overall total of the extra-revenues could be between EUR 3,206 and 4,060 million, corresponding to 6.0%-7.5%, respectively, of the total spending for public hospitals (EUR 53,847 million, net of the cost of accredited private hospitals, as per the latest available data for 2015).

In conclusion, this Section has focused – as it does each year – on the need to make the financial statements of public hospital facilities more transparent (and therefore more assessable), starting from the Hospital Centers for an obvious series of reasons, which include the following:

- first of all, in order to better understand the level of efficiency/inefficiency of the management, just as legislation has required for some time;
- to be able to compare the different levels of efficiency among different facilities, since it is not enough to be content with the average data, which

end up "hiding" the differences that instead occur not only among different territories but also among different hospital facilities within the same territory;

- to be able to intervene in a timely manner and not always and exclusively after the fact (through debt rescheduling plans and/or external administration), though it would be necessary to act before the fact when problematic signals arise;
- to free up economic resources that can/should be better used for the many needs of the hospital facilities: starting with the obsolescence of facilities and machinery (according to the OASI Report, the former make up 29%, and the latter 74%), not to mention the absolutely necessary investment in maintenance (which is the first thing to be postponed when costs need to be cut), to encourage staff turnover (a particularly hot topic, given the already active retirement process and, especially, that foreseen in the near future for a large number of doctors and nurses) and finally – but certainly not the least, rather the most important reason – to undertake some serious reorganization/restructuring of services;
- to be able to reward/punish facilities that are not only able to cut costs, but also to reorganize and restructure, so as to maintain and even improve the levels of services for users (even with the awareness of how difficult it is to implement changes in the public management model due to all the regulatory restrictions that exist, especially those relating to personnel);
- to transform – albeit slowly – that collective underground culture that tends too easily to accept that the public system may not make the best use of the scarce resources available, except that they then complain about the excessive co-payment charges or additional taxes (IRPEF and IRAP);
- to assess, in the end, how much the public service actually costs, examining all the true spending components (in relation to the services actually provided with the necessary quality), so as to make transparent "how much is paid, for what and with what results";
- and finally, to bring the manner public facilities are handled more in line with that of the accredited private facilities that offer the same services: in this regard, please note that the latter are paid exclusively according to DRGs, which includes not only the operating costs but the investment costs as well, whereas the former (at present only the Hospital Centers), in addition to the DRGs, also receive contributions for capital expenditures; this does not mean that we should not take into account all the non-tariff functions that the public system performs in the territory, provided they are clearly explained so that they can also be reasonably assessed.

This year we have dealt with the "by function" activities balance sheet entry in greater detail for all the reasons described in this section: too many sub-entries end up creating a sort of umbrella-entry whose size is unacceptable, to which we add the "generous" mechanism of the Ministerial Decree already mentioned several times, as well as the possibility of conveying contributions for operating expenses and capital expenditures, thereby contributing to the implicit covering of the budget).

The risk is that Hospital Centers that present percentages of "by function" activities (compared to healthcare services + co-payment charges), which exceed 30% and sometimes double that percentage, inevitably end up also containing "reimbursements for expenses" and/or forms of contribution to operating expenses as well as for capital expenditures.

At this point, a possible proposal could be to introduce detailed accounting of the "by function" activities actually carried out, perhaps integrated over time with a cost/benefit analysis, so as to connect the remuneration to the number of patients treated and to the quality of the solutions provided (whereas at present we tend to finance the organization as it is).

We point out – just to be clear – that two operating units with the same amount of personnel and equipment can perform a very different number of interventions (potentially ranging from 1 to 10). With the result of giving rise, for example, to lengthier waiting lists for the better units because the patients flock to the one considered more effective and shorter waiting lists for units that instead already have a smaller pool of patients to draw from because they provide services deemed to be of lower quality. The result is that we run the risk of rewarding the service that has the shorter lists just because it offers less services and punishing the service that has the longest lists even though it works better.

4.2. Transparency and certifiability of financial statements is still too slow

In some of the previous editions of the *Health&Hospitals* Report an attempt was made to reconstruct the regulatory interventions with which, starting from Legislative Decree no. 502/1992 (see in particular Article 5 on the subject of "Assets and accounting" of public healthcare facilities), the national legislature and regional governments have tried to introduce suitable

administrative, accounting and management procedures, as well as certification criteria and procedures for the financial statements of NHS institutions[5].

The measures in question testify to an ever-increasing attention from the Public Administration to data and flows, which are seen as useful tools for ensuring a coherent and sustainable health policy and efficient healthcare planning. On this point, it is worth mentioning that in the various *Health&Hospitals* Reports, the financial statements of the Italian Hospital Centers were used in order to gain a better understanding of some key management processes and obtain indications regarding efficiency/inefficiency[6].

As is known, in the most recent Italian experience, the governance of healthcare spending, in aiming to ensure the sustainability of the system, has often focused its attack on the imposition of accounting constraints rather than on the needs of patients and consequently on the necessary actions of restructuring/reorganization of healthcare services so as to reduce the impact on the patients by means of the intervention on costs.

In a system like the Italian one, where health protection is above all a guaranteed constitutional right, any cost intervention should not be separated from a preliminary assessment of the levels of assistance that must be guaranteed and above all provided. In this perspective, a reference cost for a health service can not be defined without assessing the ability to satisfy the need for care to which that service is directed.

The diffusion of a data culture might somehow help to reverse this trend: the data – if measured transparently and reliably – makes it possible, on the one hand, to evaluate the healthcare assistance provided (management data) and, on the other, to calculate the financial resources utilized (economic, capital and financial). An analysis of the data and a comparison between the different agency and regional institutions may indicate any areas of ineffi-

[5] To the first intervention in 1992, amended by Legislative Decree no. 229/1999, were added: the Ministerial Decree of October 20, 1994, amended by the Ministerial Decree of February 11, 2002; Article 1, Paragraph 291 of the 2006 Finance Law; Title II of the Legislative Decree of June 23, 2011, no. 118, implementing the Law of May 5, 2009, no. 42; Article 11 of the 2010-2012 Healthcare Pact; the Ministerial Decree of September 17, 2012; the Ministerial Decree of March 1, 2013; the 2015 Document updating the national anti-corruption plan; the Ministerial Decree of June 21, 2016; Article 1 of the Legislative Decree of the 2017 Budget. For a more detailed reconstruction, see Ermeneia, *Health&Hospitals*, 2009, 2013 (pp. 64 ff.), 2016 (pp. 93 ff.), Rome, FrancoAngeli.

[6] Distinct from this, but equally relevant, is the question of the so-called big data, or procedures for collecting, analyzing and relating large volumes of information relating to a large number of users. The issue, which, in healthcare, is especially linked to that of privacy, is very timely considering the possible use for business purposes and the huge economic value that such data may potentially hold.

ciency and/or inappropriateness, as well as the best practices and service experiences to be enhanced in the revision of the current organization of healthcare services[7].

At the same time, the accessibility, transparency and veracity of healthcare data and financial statements should help users (as well as other stakeholders such as taxpayers, as well as service providers and the public financier) to evaluate and consciously choose from among the different types of hospitals, their effective level of efficiency, and finally grant the possibility to make comparisons between different hospitals (public and accredited private facilities).

The legislation on the harmonization of accounting systems and financial statements of the Regions, local authorities and their bodies and on the certificability paths (PAC - Certification Implementation Path) was created with the purpose of responding to these different needs so as to guarantee certainty, homogeneity and quality of the management, economic, capital and financial data of public healthcare facilities.

In particular, Art. 2 of the Ministerial Decree of September 17, 2012 (the so-called Certification Decree) sets out that the National Health Service bodies must guarantee, under the responsibility and coordination of the regions to which they belong, the certifiability of their data and their financial statements (see Table 27). Pursuant to Art. 2 of the Ministerial Decree of March 1, 2013, the individual regions must provide for the approval and verification of the implementation of the PACs according to the procedures and timescales envisaged by the Ministry of Health. At the same time, the Ministry set out a timetable for carrying out a series of technical requirements and checking the status of implementation of the PACs in the various regions (see Table 28).

On the basis of the deadlines set by the Ministry of Health (by October 31, 2017), the Regions sent the documentation necessary to assess the status of implementation of the PACs. The material received displayed the lack of homogeneity among the different territorial realities, also due to the fact that, while meeting the single deadline for sending the documentation (October 31, 2017), each of them presented documentation on the progress of work on different dates.

[7] The need to develop a data culture in healthcare has been constantly underlined also by the Court of Auditors and by the Constitutional Court. See, for example, Const. Court ruling no. 169 of March 21, 2017, which states the need to indicate the financial data for the resources to be allocated for the implementation of the basic levels of assistance and for those to be charged instead to other costs.

Table 27 – National legislation governing the preparation of the financial statements of Hospital Centers and directly managed Hospitals by local health authorities

Legislative Decree No. 502/1992, as amended by Legislative Decree, no. 229/1999	New regulations directed at the regions for the economic and financial management of local health authorities and hospital centers. In order to provide a uniform structure to the items of the multi-year and annual financial statements and annual final accounts, as well as consistency for the values entered in these items and to enable comparative measurements of cost, performance and results, a special balance sheet was designed, with a joint Ministerial Decree issued, subject to agreement with the Permanent Conference for relations between the State and Regions.
Ministerial Decree of October 20, 1994, as amended by the Ministerial Decree of February 11, 2002	Local health authority and Hospital Center balance sheet
Art. 1, paragraph 291, of the Law of December 23, 2005, no. 266 (2006 Finance Act)	By decree of the Ministry of Health, in agreement with the Ministry of Economics and Finance, in agreement with the State-Regions Conference, the criteria and procedures for certification of the financial statements of NHS institutions are defined.
Title II, Legislative Decree of June 23, 2011, no. 118, implementing the Law of May 5, 2009, no. 42	General and applied accounting principles for the healthcare sector.
Art. 11 of the 2010-2012 Healthcare Agreement	Pursuant to the need to ensure coordination in the health sector of the function of government spending and improving the quality of its accounting and management data and the underlying processes for their production and representation, the Regions and Autonomous Provinces commit to ensuring the quality assurance of the administrative and accounting procedures underlying the correct accounting of corporate events, as well as the quality of accounting data.

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(Continued) *Table 27 – National legislation governing the preparation of the financial statements of Hospital Centers and directly managed Hospitals by local health authorities*

Ministerial Decree of September 17, 2012	Provision on the certifiability of the budgets of NHS entities.
Ministerial Decree of March 1, 2013	Definition of the certification implementation processes.
2015 document updating the National Anti-Corruption Plan	Recognition of the need for the PAC as a fundamental tool for monitoring and reducing the risk of administrative and accounting fraud in healthcare.
Ministerial Decree of June 21, 2016	Plans referred to in Art. 1, paragraph 528 of Law 208/2015, for Hospital Centers, University Hospital centers, IRCCS or other public entities and criteria for the identification of costs and the determination of revenues.
Legislative Decree for the 2017 Budget	In order to improve performance and to pursue the efficiency of production factors and the allocation of resources of the Hospital Centers, University Hospital centers, IRCCS or other public entities providing services of hospitalization and care, pursuant to Art. 1, paragraph 524, letter a) of the Law 208/2015, the words: "greater than or equal to 10% of these revenues, or, in absolute terms, at least EUR 10,000,000" are replaced by the following: "greater than or equal to 7% of these revenues, or, in absolute terms, at least EUR 7,000,000".

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table 28 – Timing for the fulfillment of technical requirements and verification of the implementation status of the PAC - Certification Implementation Path in the various Regions

2013	Verification of submission by the regions by **June 26, 2013** of: - official measure for the appointment of the P.A.C coordinator; - official measure for adoption of the P.A.C. containing the outline and the accompanying periodic report. Verification of the P.A.C, appropriately adapted to the recommendations formulated by the Compliance Committee and the Lea Committee for the Regions under a Debt Rescheduling Plan and by the Compliance Committee for the Regions not under a Debt Rescheduling Plan.
2014	Verification of: - the timely sending the periodic report after the first P.A.C progress monitoring session; - sending of the P.A.C, appropriately adapted to the recommendations formulated by the Compliance Committee and the Lea Committee for the Regions under a Debt Rescheduling Plan and by the Compliance Committee for the Regions not under a Debt Rescheduling Plan.
2015	Verification of: - the sending of the P.A.C adjustment path, if not yet carried out; - the sending, in compliance with the scheduled timing, of the periodic monitoring report on the progress of P.A.C.
2016	Verification of: - the sending, in compliance with the scheduled timing, of the periodic monitoring report on the progress of P.A.C. - the sending by the Region of the summary documentation of the regional situation.
2017	Verification of the implementation status of the P.A.C. according to the documentation sent by all the Regions by **October 31, 2017**.

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

An overall analysis (see Table 29) showed that on October 31, 2017, only Umbria and Basilicata had met all the scheduled deadlines and completed the P.A.C. - Certification Implementation Path. Other Regions are still engaged in the implementation phase of the P.A.C. according to the defined deadlines (e.g. Emilia-Romagna and Marche), and others have reprogrammed or have to reschedule the implementation time of the P.A.C., or redefine the implementation actions with an official measure in order to formalize any changes to the P.A.C. itself (e.g. Lombardy, Tuscany, Veneto, Sicily, Campania, and Apulia).

As for the Autonomous Provinces and the Special Statute Regions, Art. 3 of the Ministerial Decree of March 1, 2012 envisages the adoption of the P.A.C. - Certification Implementation Path, though in a manner compatible with the rules of the respective statutes. These bodies have therefore not sent the Ministry any information on the implementation and progress of the P.A.C. Some data relating to these local situations can however be identified by, for example, consulting the respective institutional sites:

- in the Autonomous Province of Bolzano, with Resolution no. 213 of 2016, the Provincial Council approved the P.A.C. - Certification Implementation Path, of the Provincial Health Authority, which should be completed by the end of June 2019, appointed the provincial coordinator and the agency coordinator for the implementation of the P.A.C. and established the strategic project group;
- in Friuli Venezia Giulia, in 2016 the Oncological Reference Center in Aviano was identified as a pilot agency capable of introducing interventions on the planning and control systems of the administrative and accounting processes, through the implementation of the P.A.C. - Certification Implementation Path;
- in Sardinia, Resolution no. 29/8 of 2013 defined and approved the P.A.C., amending it and subsequently integrating it with Resolution nos. 50/21 of 2013 and 27/11 of 2014.

An analysis of the data sent by the Regions to the Ministry of Health as of October 31, 2017 shows that there is a strong lack of homogeneity between the results achieved, not only in the comparison among the different Regions, but also in the comparison between the various entities in the same territorial area.

A similar lack of uniformity is also apparent if we take into consideration the types of critical issues reported by the Regions as causing the delays in implementing the P.A.C.s. In particular, these are organizational problems linked to:

- the lack of human resources with specific skills or the tools necessary for coordination;

Table 29 – Status of implementation of the P.A.C. - Certification Implementation Path in the various Regions[1]

Region	*P.A.C. deadline*	*P.A.C. reformulations*	*Measure*	*Reasons for reformulations*
REGIONS NOT UNDER A DEBT RESCHEDULING PLAN				
Piedmont	10/30/2017	To be carried out as per the indication of the MEF verification committee		The Committees indicate that the table included in the report still shows actions with overdue maturities not implemented in all agencies due to organizational problems
Lombardy	12/21/2019	Carried out	Regional Council Decree no. X/7009 of 07/31/17	Reorganization of the Regional Healthcare Service, Regional Law of August 11, 2015 no. 23
Veneto	10/20/2018	Carried out	Decree no. 71 of June 15, 2017	Reorganization of the Regional Healthcare Service, Regional Law of October 25, 2016 no. 19
Liguria	12/31/2017	Still to be carried out		Reorganization of the Regional Healthcare Service, Regional Law of July 29, 2016 no. 17
Emilia Romagna	09/30/2017	Not carried out		Unnecessary because the deadlines have been met as of the verification date
Tuscany	06/30/2020	Carried out	Regional Council Decree no. 719 of July 19, 2016	Reorganization of the Regional Healthcare Service, Regional Law of March 16, 2015 no. 28 and Regional Law of December 28, 2015 no. 84
Umbria	09/30/2017	Not carried out		Unnecessary because the deadlines have been met as of the verification date
Marche	10/31/2017	Carried out	Regional Council Decree no. 1576 of December 19, 2016	Appointment of new General Managers and seismic events
Basilicata	12/31/2015	Not carried out		Unnecessary because the deadlines have been met as of the verification date

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(Continued) *Table 29 – Status of implementation of the P.A.C. - Certification Implementation Path in the various Regions*[1]

Region	*P.A.C. deadline*	*P.A.C. reformulations*	*Measure*	*Reasons for reformulations*
REGIONS UNDER A DEBT RESCHEDULING PLAN				
Lazio	02/15/2018	Carried out	Acting Commissioner Decree no. 311 of October 11, 2016	Reorganization of the Regional Healthcare Service with Regional Law of December 31, 2015, no. 17, launch of the regional accounting assistance project aimed at implementing the P.A.C. (SANPAC Project)
Abruzzo	11/01/2017	Still to be carried out		Indication regarding the reprogramming by the MEF technical committees due to the delay in the implementation of the actions
Molise	09/30/2017	Still to be carried out		Indication of the MEF verification committees
Campania	12/31/2017	Still to be carried out		Indication regarding the reprogramming by the MEF technical committees due to the delay in the implementation of the actions
Apulia	11/11/2017	Still to be carried out		Announced intention to extend the P.A.C. to December 31, 2019 with prot. 25 of October 23, 2017
Calabria	11/11/2017	To be carried out as per the indication of the MEF verification committee		The Board and the Committee recommend evaluating the need to reschedule deadlines
Sicily	10/30/2017	Carried out and still to be carried out	Executive Decree 1559 of September 5, 2016	Request for a further 18 month rescheduling beyond the deadline of October 30, 2017 with prot. 45 of October 13, 2017

(1) Data submitted by the Ministry of Health for the Benchmarking Workshop among the regional health systems – Franco Tommasoni – VII edition – Perugia, November 9, 2017.

Source: *survey by Ermeneia – Studi & Strategie di Sistema, 2017*

– or even the need to formalize each implementation step with a regional provision or corporate executive decision.

In this context, it is necessary to take into account the fact that within an individual regional area, the potential delay of even a single agency in the certification process leads to the incompleteness of the P.A.C, for the entire Region to which that agency belongs.

In other cases, for example in the Region of Lombardy and in the Region of Veneto, the process of adjustment to national legislation on transparency and accountability of financial statements has intersected with that of reforms of the Regional Health Service, with the consequent need to adapt to new regional governance models.

As regards the Regions that have correctly adhered to the terms and procedures established at the Ministerial level, on the other hand, it can be observed that a fundamental role has been played by the central governing body in directing and coordinating the individual agencies.

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Part two

Statistical indicators

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1. Facility data

1.1. Number of public and accredited private medical institutions

Pending publication of the 2014 edition of the "Management and Financial Activities of the Local Health Authority and Hospital Centers" Report, which reports the data for facility and activity in the sector, this year an alternative source was used, though also published by the Ministry of Health: "Open Data 2010-2014". According to the information available in this area of the Ministerial web portal, the progressive restructuring of the Italian hospital landscape which, since 2004, has affected, above all, the network of public facilities, continues, even if in less a marked manner than in previous years. This network has, as has already been mentioned several times, in fact been subject to aggregations and transformations into new types of institutions, mainly from a hospital system directly managed by local health authorities towards new organizational forms within variously articulated Hospital-Center systems (Hospital Centers, Centers integrated with universities, Centers integrated with the NHS). In the private sector, however, the trend, already found in some Regions, especially Lazio, of the reconversion or the actual downgrading of many accredited facilities into production centers with distinctly long-term, residential or even territorial characteristics is clearly seen. More in general, data from the Ministry of Health indicate for 2014 a further reduction compared to twelve units among the hospitals under the direct management of the local health authority the year before, of three accredited healthcare facilities, while the presence of two new local health authority (ASL) facilities is highlighted. Compared to 2010, the new reference year for the data presented, it can be seen that the total of public and private institutions decreased from 1,163 to 1,056 units in 2014, a total reduction of -9.2%. Tables S/1 and S/2 show, in particular:

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– in the public sector, above all a reduction in the directly managed Hospitals (-18.4%), followed by the 'pure' Hospital Centers (-7.8%), for the most part probably merged into the ranks of the Hospital Centers integrated with the NHS, which increased by 12.5% between 2013 and 2014; overall, public healthcare and assimilated institutions have seen a gradual decline during the period considered, with a final delta of -13.2%, although it must be pointed out that there are more reconversions of types or aggregations than of real divestments;
– in the context of private institutions in the strict sense (accredited healthcare facilities), there is confirmation of the trend towards a less pronounced downsizing, which saw its presence in the hospital system decrease from 529 units in 2010 to 506 in 2014 (-4.3%).

The ratio of public hospitals (in the broadest most inclusive sense) to private hospitals (accredited healthcare facilities) within the total number of hospital institutions shows a national average of 52.1% for the former and 47.9% for the latter (Table S/4), and is fairly well balanced in most Italian regions, again keeping in mind the larger size and the average number of patient beds found in the public institutions.

Considering the ratio of public/private institutions from Region to Region as reported in the data for 2014, we can see in which geographical areas there is a greater number of public institutions and where there is a sort of balance of the 'somewhat mixed system' between these two sectors (Table S/4):
– a greater number of public facilities is found especially in Basilicata, Sardinia, Friuli Venezia Giulia, Veneto, Liguria, Umbria, Molise, Abruzzo, Tuscany e in the autonomous provinces of Bolzano and Trento;
– the presence of a somewhat mixed system (with greater balance between the types of institutions) is instead found mainly in Campania, Lombardy, Lazio, Piedmont, Calabria, the Aosta Valley, and Sicily.

1.2. Bed distribution

Focusing on the analysis of number of beds, rather than on the number of healthcare institutions, it can be seen that in Italy there were just over 197,000 beds available in 2014, divided up in a rather stable distribution over time. 79.1% belonging to the public category in the broad sense and 20.9% to the category of accredited private healthcare facilities (Table S/5).

The territorial distribution still favors the North, with Central Italy and the South following in that order in the case of public facilities, and vice versa for private facilities.

The data percentages presented in Table S/5 also reveal steady territorial distribution for public and private patient beds given the desirable aim of achieving a balance of the "mixed system", although this system is uncertain and increasingly being called into question by the unsettling measures regarding the reorganization of the hospital system network, the approval procedure for which is currently in the delicate phase of regional implementation.

If we give a look at the distribution of beds by Region (again using the percentages contained in Table S/5), we can see that the greatest numbers for public facilities belong to Liguria (96.2%), Veneto (93%), Basilicata (91.5%), and Umbria (91.3%). On the other hand, the greatest numbers of patient beds in accredited private healthcare facilities belong mainly to Campania (35.4%), Calabria (34.7%), the Autonomous Province of Trento (28.3%), Sicily (26.3%), Lazio (25.1%), Emilia Romagna (24.7%), Abruzzo (23.5%) and Piedmont (21.7%).

For the component of the accredited private sector offer represented by the AIOP facilities, it is instead possible to present an update to 2017, with a comparison limited to 2014 compared to the other private service components in Table S/6. This shows more than 30,000 beds for hospitalization purposes out of a total of just over 41,000, a percentage exceeding 73%.

The Regional distribution of AIOP's network of accredited institutions in 2017 shows a concentration among NHS accredited facilities according to the most prevalent nosological classifications (Table S/7):

– multi-specialist (179 out of 449 institutions);
– surgical (72 out of 449 institutions);
– assisted living residences (67 out of 449 institutions);
– rehabilitation (65 out of 449 institutions);
– neuro-psychiatry (34 out of 449 institutions);
– medical (16 out of 449 institutions);
– long-stay care (16 out of 449 institutions).

If we consider the different types of activities (see Tables S/8 and S/9), also belonging to the AIOP-associated institutions (2017), the greater concentrations at the national level are, in descending order: surgical, medical, rehabilitation, assisted living residences (R.S.A.), neuro-psychiatry, and long-stay care. There is also a large and significant amount for highly specialized areas, especially cardiac surgery.

1.3. Medical equipment

Even the distribution of allocations of equipment is affected by the failed update of 2014 data for the technological apparatus that supports and qualifies hospital activity and in most Italian regions also makes an important contribution in terms of assistance to the area. The 2013 situation may be deduced as per regional distribution and type of equipment from Table S/10 (for public facilities), Table S/11 (for accredited healthcare facilities), and from Table S/12 (for non-accredited healthcare facilities).

The data, presented once again in this report, seemed to confirm the significance of the contribution that the private hospital component provides to the supply of advanced technological services, continuing to ensure significant territorial compensation within the repeatedly invoked concept of the "mixed system".

Table S/10 (Public facilities) highlights that the bulk of the most sophisticated equipment (Computerized Axial Tomography - CT, Hemodialysis machines - HD, Magnetic Resonance Tomography - MRT, Linear Accelerators - LINACs) are mainly concentrated in hospitals in the North of Italy, except for Hyperbaric Chambers, which are much widespread in the South.

With reference to this equipment, Table S/11 shows how private facilities tend to "compensate" this imbalance with significant amounts of their own equipment situated in the South compared to the rest of the country, including Hyperbaric Chambers, CAT devices and Hemodialysis machines.

Table S/1 – Evolution in the number of public and assimilated, and private institutions (accredited healthcare facilities)

	2010		2011		2012		2013		2014	
	A.V.	*%*	*A.V.*	*%*	*A.V.*	*%*	*A.V.*	*%*	*A.V.*	*%*
– Hospital Centers	64	5.5	62	5.5	59	5.4	59	5.5	59	5.6
– Directly managed hospitals	429	36.9	400	35.6	379	34.7	362	33.9	350	33.1
– Hospital Centers integrated with the NHS	8	0.7	8	0.7	8	0.7	8	0.7	9	0.9
– Hospital Centers integrated with universities	18	1.5	19	1.7	19	1.7	19	1.8	18	1.7
– University hospitals	2	0.2	2	0.2	2	0.2	2	0.2	2	0.2
– Institutes for Treatment and Research	60	5.2	61	5.4	62	5.7	62	5.8	62	5.9
– Religiously-affiliated classif. hospitals	30	2.6	30	2.7	30	2.7	28	2.6	28	2.7
– USL Facilities	20	1.7	17	1.5	17	1.6	17	1.6	19	1.8
– Research facilities	3	0.3	3	0.3	3	0.3	3	0.3	3	0.3
– *Subtotal*	634	54.5	602	53.5	579	53.1	560	52.4	550	52.1
– Private hospitals (accredited healthcare facilities)	529	45.5	523	46.5	512	46.9	509	47.6	506	47.9
Grand total	*1,163*	*100.0*	*1,125*	*100.0*	*1,091*	*100.0*	*1,069*	*100.0*	*1,056*	*100.0*

Source*: data processed from the Report on "Attività gestionali ed economiche delle Usl e Aziende ospedaliere", Ministry of Health, Years 2009, 2010, 2011, 2012 and 2013 and Ministry of Health – Open Data 2014*

Table S/2 – Evolution in the number of public and assimilated, and accredited private institutions (% increase)

	2011/2010	*2012/2011*	*2013/2012*	*2014/2013*	*2014/2010*
– Hospital Centers	-3.1	-4.8	0.0	0.0	-7.8
– Directly managed hospitals	-6.8	-5.3	-4.5	-3.3	-18.4
– Hospital Centers integrated with the NHS	0.0	0.0	0.0	12.5	12.5
– Hospital Centers integrated with universities	5.6	0.0	0.0	-5.3	0.0
– University hospitals	0.0	0.0	0.0	0.0	0.0
– Institutes for Treatment and Research	1.7	1.6	0.0	0.0	3.3
– Religiously-affiliated classified hospitals	0.0	0.0	-6.7	0.0	-6.7
– USL Facilities	-15.0	0.0	0.0	11.8	-5.0
– Research facilities	0.0	0.0	0.0	0.0	0.0
– *Subtotal*	-5.0	-3.8	-3.3	-1.8	-13.2
– Private hospitals (accredited healthcare facilities)	-1.1	-2.1	-0.6	-0.6	-4.3
Grand total	-3.3	-3.0	-2.0	-1.2	-9.2

Source*: data processed from the Report on "Attività Gestionali ed economiche delle Usl e Aziende ospedaliere", Ministry of Health, Years, 2009, 2010, 2011, 2012 and 2013 and Ministry of Health – Open Data 2014*

Table S/3 – Public and assimilated, and private institutions, by region. Year 2014 (A.V.)

Regions	*Hospital Centers*	*Directly managed hospitals*	*Hospital Centers integrated with the NHS*	*Hospital Centers integrated with universities*	*University hospitals*	*Institutes for Treatment and Research*	*Religiously-affiliated classified hospitals*	*USL Facilities*	*Research facilities*	*Total*	*Private hospitals (accredited healthcare facilities)*
– Piedmont	3	22	-	3	-	3	-	6	-	37	39
– Aosta Valley	-	1	-	-	-	-	-	-	-	1	1
– Lombardy	29	1	-	-	-	25	5	-	-	60	70
– A.P. of Bolzano	-	7	-	-	-	-	-	-	-	7	5
– A.P. of Trento	-	7	-	-	-	-	1	-	-	8	6
– Veneto	1	21	-	1	-	3	6	6	-	38	15
– Friuli V.G.	1	8	-	2	-	2	-	-	-	13	5
– Liguria	-	6	-	-	-	3	2	-	-	11	5
– Emilia Romagna	1	19	-	4	-	3	-	1	-	28	44
– Tuscany	-	31	-	4	-	2	-	2	1	40	27
– Umbria	2	8	-	-	-	-	-	-	-	10	5
– Marche	2	5	-	-	-	1	-	-	-	8	13
– Lazio	3	35	1	2	2	7	8	2	-	60	60
– Abruzzo	-	18	-	-	-	-	-	-	-	18	11
– Molise	-	3	-	-	-	1	-	-	1	5	3
– Campania	6	32	2	1	-	2	3	1	-	47	63
– Apulia	-	25	1	1	-	5	2	-	-	34	31
– Basilicata	1	7	-	-	-	1	-	-	-	9	3
– Calabria	4	17	-	-	-	1	-	-	-	22	30
– Sicily	5	52	3	-	-	3	1	1	1	66	60
– Sardinia	1	25	2	-	-	-	-	-	-	28	10
North	35	92	-	10	-	39	14	13	-	203	190
Center	7	79	1	6	2	10	8	4	1	118	105
South	17	179	8	2	-	13	6	2	2	229	211
Italy	*59*	*350*	*9*	*18*	*2*	*62*	*28*	*19*	*3*	*550*	*506*

Source: *processing by Ermeneia – data from the Ministry of Health. Open Data 2014*

Table S/4 – Public and accredited private institutions, by region. 2014/2013 (% Composition)

Regions	2014											2013		Total healthcare facilities
	Hospital Centers	Directly managed hospitals	Hospital Centers integrated with the NHS	Hospital Centers integrated with universities	University hospitals	Institutes for Treatment and Research	Religiously-affiliated classified hospitals,	USL Facilities	Research facilities	Total public institutions	Private hospitals (accredited healthcare facilities)	Total public institutions	Private hospitals (accredited healthcare facilities)	
– Piedmont	3.9	28.9	0.0	3.9	0.0	3.9	0.0	7.9	0.0	48.7	51.3	48.7	51.3	100.0
– Aosta Valley	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	50.0	50.0	100.0
– Lombardy	22.3	0.8	0.0	0.0	0.0	19.2	3.8	0.0	0.0	46.2	53.8	46.2	53.8	100.0
– A.P. of Bolzano	0.0	58.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58.3	41.7	58.3	41.7	100.0
– A.P. of Trento	0.0	50.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	57.1	42.9	57.1	42.9	100.0
– Veneto	1.9	39.6	0.0	1.9	0.0	5.7	11.3	11.3	0.0	71.7	28.3	71.7	28.3	100.0
– Friuli V.G.	5.6	44.4	0.0	11.1	0.0	11.1	0.0	0.0	0.0	72.2	27.8	72.2	27.8	100.0
– Liguria	0.0	37.5	0.0	0.0	0.0	18.8	12.5	0.0	0.0	68.8	31.3	68.8	31.3	100.0
– Emilia R.	1.4	26.4	0.0	5.6	0.0	4.2	0.0	1.4	0.0	38.9	61.1	38.9	61.1	100.0
– Tuscany	0.0	46.3	0.0	6.0	0.0	3.0	0.0	3.0	1.5	59.7	40.3	59.7	40.3	100.0
– Umbria	13.3	53.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	33.3	66.7	33.3	100.0
– Marche	9.5	23.8	0.0	0.0	0.0	4.8	0.0	0.0	0.0	38.1	61.9	55.2	44.8	100.0
– Lazio	2.5	29.2	0.8	1.7	1.7	5.8	6.7	1.7	0.0	50.0	50.0	47.2	52.8	100.0
– Abruzzo	0.0	62.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.1	37.9	62.1	37.9	100.0
– Molise	0.0	37.5	0.0	0.0	0.0	12.5	0.0	0.0	12.5	62.5	37.5	62.5	37.5	100.0
– Campania	5.5	29.1	1.8	0.9	0.0	1.8	2.7	0.9	0.0	42.7	57.3	43.8	56.3	100.0
– Apulia	0.0	38.5	1.5	1.5	0.0	7.7	3.1	0.0	0.0	52.3	47.7	54.8	45.2	100.0
– Basilicata	8.3	58.3	0.0	0.0	0.0	8.3	0.0	0.0	0.0	75.0	25.0	75.0	25.0	100.0
– Calabria	7.7	32.7	0.0	0.0	0.0	1.9	0.0	0.0	0.0	42.3	57.7	42.3	57.7	100.0
– Sicily	4.0	41.3	2.4	0.0	0.0	2.4	0.8	0.8	0.8	52.4	47.6	52.8	47.2	100.0
– Sardinia	2.6	65.8	5.3	0.0	0.0	0.0	0.0	0.0	0.0	73.7	26.3	73.7	26.3	100.0
North	8.9	23.4	0.0	2.5	0.0	9.9	3.6	3.3	0.0	51.7	48.3	51.7	48.3	100.0
Center	3.1	35.4	0.4	2.7	0.9	4.5	3.6	1.8	0.4	52.9	47.1	52.9	47.1	100.0
South	3.9	40.7	1.8	0.5	0.0	3.0	1.4	0.5	0.5	52.0	48.0	52.7	47.3	100.0
Italy	*5.6*	*33.1*	*0.9*	*1.7*	*0.2*	*5.9*	*2.7*	*1.8*	*0.3*	*52.1*	47.9	*52.4*	*47.6*	*100.0*

Source: *processing by Ermeneia – data from the Ministry of Health. Open Data 2014*

Table S/5 – Public and accredited private patient beds used for hospitalization, by region. Year 2014

Regions	2014					2013		
	Public and assimilated institutions (1)		Private hospitals (accredited healthcare facilities)		Total	Public institutions	Private hospitals (accredited healthcare facilities)	Total
	Patient beds	% of the total	Patient beds	% of the total		% of the total	% of the total	
– Piedmont	12,284	78.3	3,403	21.7	15,687	79.4	20.6	100.0
– Aosta Valley	394	84.7	71	15.3	465	86.0	14.0	100.0
– Lombardy	28,514	78.7	7,732	21.3	36,246	77.6	22.4	100.0
– A.P. of Bolzano	1,665	86.9	250	13.1	1,915	86.6	13.4	100.0
– A.P. of Trento	1,380	71.7	544	28.3	1,924	72.7	27.3	100.0
– Veneto	15,361	93.0	1,154	7.0	16,515	92.9	7.1	100.0
– Friuli Venezia Giulia	3,917	90.0	436	10.0	4,353	90.2	9.8	100.0
– Liguria	4,954	96.2	194	3.8	5,148	96.6	3.4	100.0
– Emilia Romagna	13,057	75.3	4,277	24.7	17,334	75.4	24.6	100.0
– Tuscany	9,322	85.1	1,628	14.9	10,950	86.3	13.7	100.0
– Umbria	2,523	91.3	239	8.7	2,762	92.5	7.5	100.0
– Marche	4,278	83.5	845	16.5	5,123	83.5	16.5	100.0
– Lazio	14,480	74.9	4,857	25.1	19,337	71.8	28.2	100.0
– Abruzzo	3,062	76.5	941	23.5	4,003	76.7	23.3	100.0
– Molise	977	87.5	140	12.5	1,117	87.7	12.3	100.0
– Campania	10,261	64.6	5,611	35.4	15,872	64.3	35.7	100.0
– Apulia	9,830	81.3	2,257	18.7	12,087	80.9	19.1	100.0
– Basilicata	1,600	91.5	149	8.5	1,749	91.7	8.3	100.0
– Calabria	3,185	65.3	1,691	34.7	4,876	65.3	34.7	100.0
– Sicily	10,609	73.7	3,790	26.3	14,399	73.7	26.3	100.0
– Sardinia	4,274	81.7	955	18.3	5,229	82.2	17.8	100.0
North	81,526	81.9	18,061	18.1	99,587	81.7	18.3	100.0
Center	30,603	80.2	7,569	19.8	38,172	79.1	20.9	100.0
South	43,798	73.8	15,534	26.2	59,332	73.8	26.2	100.0
Italy	*155,927*	*79.1*	*41,164*	*20.9*	*197,091*	*78.8*	*21.2*	*100.0*

1) See Table S/3.

Source: *processing by Ermeneia – data from the Ministry of Health*

Table S/6 – Private hospitals (private accredited healthcare facilities) affiliated with the NHS, by region– Institutions and Patient beds. Year 2014

	AIOP		*ARIS*		*Other*		*Total*	
	Institutions	*Accred. patient beds,*	*Institutions*	*Accred. patient beds*	*Institutions*	*Accred. patient beds*	*Institutions*	*Accred. patient beds*
– Piedmont	23	1,981	7	720	9	702	39	3,403
– Aosta Valley	1	71	-	-	-	-	1	71
– Lombardy	37	4,468	14	1,880	19	1,384	70	7,732
– Bolzano	2	124	1	50	2	76	5	250
– Trento	3	296	2	103	1	145	6	544
– Veneto	15	1,154	-	-	-	-	15	1,154
– Friuli V.G.	4	343	-	-	1	93	5	436
– Liguria	2	135	1	11	2	48	5	194
– Emilia R.	40	3,906	1	76	3	295	44	4,277
– Tuscany	14	907	7	262	6	459	27	1,628
– Umbria	4	179	1	60	-	-	5	239
– Marche	10	645	3	200	-	-	13	845
– Lazio	43	3,257	5	295	12	1,305	60	4,857
– Abruzzo	8	718	2	86	1	137	11	941
– Molise	2	100	-	-	1	40	3	140
– Campania	55	4,976	-	-	8	635	63	5,611
– Apulia	21	1,463	2	154	8	640	31	2,257
– Basilicata	1	50	1	59	1	40	3	149
– Calabria	15	1,055	-	-	15	636	30	1,691
– Sicily	52	3,449	-	-	8	341	60	3,790
– Sardinia	8	807	-	-	2	148	10	955
– North	127	12,478	26	2,840	37	2,743	190	18,061
– Center	71	4,988	16	817	18	1,764	105	7,569
– South	162	12,618	5	299	44	2,617	211	15,534
Italy	*360*	*30,084*	*47*	*3,956*	*99*	*7,124*	*506*	*41,164*
%	*71.1*	*73.1*	*9.3*	*9.6*	*19.6*	*17.3*	*100.0*	*100.0*

Source: *processing by Ermeneia – data from the Ministry of Health, Open Data 2014 and AIOP*

Table S/7 – Regional distribution of AIOP – Associated institutions according to the most prevalent nosological classifications. Year 2017

Regions	Multi-specialist		Medical		Surgical		Neuro-psychiatry,		Long-stay care		Rehabilitation		RSA/ Assisted living residences		Total Healthcare facilities		Rehabilitation centers	
	Accredited	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*
– Piedmont	13	3	-	-	-	1	5	-	2	-	4	-	4	-	28	4	-	-
– Aosta Valley	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-
– Lombardy	26	2	2	-	2	1	2	-	-	-	13	-	5	-	50	3	2	-
– Bolzano	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3	-	-	-
– Trento	1	-	-	-	-	-	-	-	2	-	-	-	-	-	3	-	-	-
– Veneto	11	-	-	-	1	-	3	-	-	-	4	-	1	-	20	-	-	-
– Friuli V.G.	3	-	-	-	-	-	-	-	-	-	1	-	1	1	5	1	-	-
– Liguria	1	1	-	-	-	-	-	-	-	-	1	-	-	-	2	1	-	-
– Emilia R.	24	1	-	-	1	-	6	-	3	-	7	-	5	-	46	1	-	-
– Tuscany	6	-	1	-	5	-	2	-	1	-	1	-	-	-	16	-	1	-
– Umbria	1	-	-	-	3	-	-	-	-	-	-	-	2	-	6	-	-	-
– Marche	6	-	-	-	-	-	1	-	1	-	2	-	-	-	10	-	1	-
– Lazio	18	9	5	-	8	9	6	-	2	-	6	-	43	1	88	19	6	-
– Abruzzo	6	-	-	-	-	-	-	-	-	-	2	-	-	-	8	-	-	-
– Molise	2	-	-	-	-	-	-	-	-	-	1	-	-	-	3	-	-	-
– Campania	24	-	2	-	14	1	5	-	4	-	7	-	-	-	56	1	1	-
– Apulia	10	-	3	-	3	-	1	-	-	-	2	-	-	-	19	-	5	-
– Basilicata	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-
– Calabria	3	-	1	-	9	1	-	-	-	-	4	-	4	-	21	1	-	-
– Sicily	20	-	2	-	21	-	3	-	-	-	6	-	2	-	54	-	-	-
– Sardinia	4	-	-	-	4	-	-	-	1	-	-	-	-	-	9	-	-	-
North	79	7	2	-	4	2	16	-	7	-	34	-	16	1	158	10	2	-
Center	31	9	6	-	16	9	9	-	4	-	9	-	45	1	120	19	8	-
South	69	-	8	-	52	2	9	-	5	-	22	-	6	-	171	2	6	-
Italy	*179*	*16*	*16*	*-*	*72*	*13*	*34*	*-*	*16*	*-*	*65*	*-*	*67*	*2*	*449*	*31*	*16*	*-*

Source: *AIOP*

Table S/8 – Regional distribution of patient beds of the AIOP – Associated institutions according to the different types of activities. Year 2017

Regions	*High Specialty*		*Medical*		*Surgical*		*Neuro-psychiatry,*		*Long-stay care*		*Rehabilitation*		*RSA/ Assisted living residence*		*Totals*		*Rehabilitation centers*	
	Accredited	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*
– Piedmont	90	10	394	86	668	250	288	32	333	18	528	10	408	-	2,709	406	-	-
– Valle d'Aosta	-	-	-	-	12	4	-	-	-	-	64	-	-	-	76	4	-	-
– Lombardy	413	18	2,529	54	2,928	213	74	20	13	-	2,046	55	561	24	8,564	384	140	-
– Bolzano	-	-	15	8	-	-	-	-	20	22	169	33	-	-	204	63	-	-
– Trento	-	-	98	15	38	-	-	-	167	17	25	-	21	-	349	32	-	-
– Veneto	8	-	441	67	610	198	362	48	70	-	624	94	188	-	2,303	407	-	-
– Friuli V.G.	-	-	117	14	195	18	-	-	-	-	108	-	75	77	495	109	-	-
– Liguria	15	-	43	17	15	43	-	-	-	-	67	-	-	-	140	60	-	-
– Emilia R.	73	2	1,057	32	1,476	159	605	2	565	5	914	10	475	170	5,165	380	-	-
– Tuscany	21	-	208	-	565	25	105	1	182	-	338	-	-	-	1,419	26	126	-
– Umbria	-	-	15	-	180	6	-	-	-	-	16	-	60	20	271	26	-	-
– Marche	-	-	143	5	258	34	50	-	134	5	112	-	58	-	755	44	40	-
– Lazio	-	64	1,189	438	1,625	1,105	469	8	685	3	1,332	320	3,697	167	8,997	2,105	625	-
– Abruzzo	-	-	286	103	339	136	100	-	-	-	153	154	-	-	878	393	-	-
– Molise	-	-	110	52	85	-	-	-	-	-	75	100	-	-	270	152	-	-
– Campania	79	13	972	275	2,213	518	473	121	495	55	1,022	12	-	-	5,254	994	68	60
– Apulia	172	-	718	85	695	127	16	-	-	-	292	100	40	-	1,933	312	448	12
– Basilicata	-	-	-	-	56	-	-	-	-	-	-	-	-	-	56	-	-	-
– Calabria	-	-	254	3	494	30	-	-	124	-	467	-	182	-	1,521	33	-	-
– Sicily	87	2	1,271	24	1,832	29	145	23	101	1	616	43	112	-	4,164	122	-	-
– Sardinia	-	5	298	10	461	31	-	-	66	15	131	15	-	-	956	76	-	-
North	599	30	4,694	293	5,942	885	1,329	102	1,168	62	4,545	202	1,728	271	20,005	1,845	140	-
Center	21	64	1,555	443	2,628	1,170	624	9	1,001	8	1,798	320	3,815	187	11,442	2,201	791	-
South	338	20	3,909	552	6,175	871	734	144	786	71	2,756	424	334	-	15,032	2,082	*516*	*72*
Italy	*958*	*114*	*10,158*	*1,288*	*14,745*	*2,926*	*2,687*	255	2,955	*141*	*9,099*	*946*	*5,877*	*458*	*46,479*	*6,128*	*1,447*	*72*

Source: *AIOP*

Table S/9 – Regional distribution of patient beds of the AIOP – Associated institutions according to the different types of activities and regions. Year 2017 (Composition %)

Regions	*High Specialty*		*Medical*		*Surgical*		*Neuro-psychiatry*		*Long-stay care*		*Rehabilitation*		*RSA/ Assisted living residence*		*Totals*	
	Accredited	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*	*Accredited*	*Non-Accredited*
– Piedmont	3.3	2.5	14.5	21.2	24.7	61.6	10.6	7.9	12.3	4.4	19.5	2.5	15.1	-	100.0	100.0
– Aosta Valley	-	-	-	-	15.8	100.0	-	-	-	-	84.2	-	-	-	100.0	100.0
– Lombardy	4.8	4.7	29.5	14.1	34.2	55.5	0.9	5.2	0.2	-	23.9	14.3	6.6	6.3	100.0	100.0
– A.P. of Bolzano	-	-	7.4	12.7	-	-	-	-	9.8	34.9	82.8	52.4	-	-	100.0	100.0
– A.P. of Trento	-	-	28.1	46.9	10.9	-	-	-	47.9	53.1	7.2	-	6.0	-	100.0	100.0
– Veneto	0.3	-	19.1	16.5	26.5	48.6	15.7	11.8	3.0	-	27.1	23.1	8.2	-	100.0	100.0
– Friuli V.G.	-	-	23.6	12.8	39.4	16.5	-	-	-	-	21.8	-	15.2	70.6	100.0	100.0
– Liguria	10.7	-	30.7	28.3	10.7	71.7	-	-	-	-	47.9	-	-	-	100.0	100.0
– Emilia R.	1.4	0.5	20.5	8.4	28.6	41.8	11.7	0.5	10.9	1.3	17.7	2.6	9.2	44.7	100.0	100.0
– Tuscany	1.5	-	14.7	-	39.8	96.2	7.4	3.8	12.8	-	23.8	-	-	-	100.0	100.0
– Umbria	-	-	5.5	-	66.4	23.1	-	-	-	-	5.9	-	22.1	76.9	100.0	100.0
– Marche	-	-	18.9	11.4	34.2	77.3	6.6	-	17.7	11.4	14.8	-	7.7	-	100.0	100.0
– Lazio	-	3.0	13.2	20.8	18.1	52.5	5.2	0.4	7.6	0.1	14.8	15.2	41.1	7.9	100.0	100.0
– Abruzzo	-	-	32.6	26.2	38.6	34.6	11.4	-	-	-	17.4	39.2	-	-	100.0	100.0
– Molise	-	-	40.7	34.2	31.5	-	-	-	-	-	27.8	65.8	-	-	100.0	100.0
– Campania	1.5	1.3	18.5	27.7	42.1	52.1	9.0	12.2	9.4	5.5	19.5	1.2	-	-	100.0	100.0
– Apulia	8.9	-	37.1	27.2	36.0	40.7	0.8	-	-	-	15.1	32.1	2.1	-	100.0	100.0
– Basilicata	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-
– Calabria	-	-	16.7	9.1	32.5	90.9	-	-	8.2	-	30.7	-	12.0	-	100.0	100.0
– Sicily	2.1	1.6	30.5	19.7	44.0	23.8	3.5	18.9	2.4	0.8	14.8	35.2	2.7	-	100.0	100.0
– Sardinia	-	6.6	31.2	13.2	48.2	40.8	-	-	6.9	19.7	13.7	19.7	-	-	100.0	100.0
North	3.0	1.6	23.5	15.9	29.7	48.0	6.6	5.5	5.8	3.4	22.7	10.9	8.6	14.7	100.0	100.0
Center	0.2	2.9	13.6	20.1	23.0	53.2	5.5	0.4	8.7	0.4	15.7	14.5	33.3	8.5	100.0	100.0
South	2.2	1.0	26.0	26.5	41.1	41.8	4.9	6.9	5.2	3.4	18.3	20.4	2.2	0.0	100.0	100.0
Italy	*2.1*	*1.9*	*21.9*	*21.0*	*31.7*	*47.7*	*5.8*	*4.2*	*6.4*	*2.3*	*19.6*	*15.4*	*12.6*	*7.5*	*100.0*	*100.0*

Source: *AIOP*

Table S/10 – Technical and biomedical equipment for diagnosis and treatment in public hospital facilities. Year 2013

Regions	*HC*	*Echo*	*CT*	*HD*	*ACCA*	*MON*	*MRI*	*OT*	*RU*	*LV*	*PXU*	*LINAC*	*RCT*	*AIA*	*CGC*	*AM*	*SL*	*ADC*
– Piedmont	-	985	85	1,163	216	3,259	44	567	243	1,042	209	29	115	313	25	629	1,149	111
– Aosta Valley	-	30	2	27	2	137	3	16	5	39	5	1	-	16	-	22	34	4
– Lombardy	-	2,378	180	2,256	373	8,231	119	1,110	595	2,338	406	64	257	652	58	1,276	3,349	230
– A.P. of Bolzano	-	152	8	110	15	589	5	54	51	139	30	-	10	37	3	96	410	15
– A.P. of Trento	-	122	11	162	20	500	5	82	14	209	19	4	9	42	2	70	321	16
– Veneto	-	1,228	85	1,047	198	4,430	65	782	248	2,120	239	27	106	338	24	711	2,072	122
– Friuli V. G.	1	345	24	421	68	1,189	13	247	56	444	59	14	22	135	8	158	636	40
– Liguria	2	413	35	462	45	1,392	29	209	92	463	106	12	34	165	11	240	554	38
– Emilia Romagna	1	1,117	88	956	135	3,988	42	740	226	1,540	230	26	83	315	25	754	1,931	65
– Tuscany	4	1,225	78	1,204	141	3,886	50	655	236	1,974	183	26	108	515	48	569	1,776	107
– Umbria	-	290	20	403	39	592	13	139	47	262	41	7	31	185	6	158	341	42
– Marche	-	421	36	486	78	1,070	26	185	96	451	63	12	55	183	12	197	479	52
– Lazio	3	1,058	126	1,129	219	4,098	79	601	284	1,392	242	39	183	541	36	804	1,623	200
– Abruzzo	-	276	25	434	81	738	11	134	83	299	59	8	35	137	12	126	279	37
– Molise	1	97	11	157	49	296	9	52	33	102	23	2	15	32	5	55	143	18
– Campania	8	715	89	577	243	2,715	22	459	212	1,028	183	11	120	320	16	628	821	155
– Apulia	2	742	66	1,225	356	2,000	36	384	231	834	146	16	118	361	28	394	780	164
– Basilicata	-	150	15	190	26	498	8	111	40	179	40	3	28	42	6	86	194	23
– Calabria	-	251	34	405	79	740	14	138	61	224	59	8	55	124	7	178	281	53
– Sicily	11	889	106	629	242	3,570	50	547	256	1,169	254	20	137	281	30	702	1,149	182
– Sardinia	2	412	33	407	124	957	19	194	85	392	79	10	51	134	15	204	386	46
North	4	6,770	518	6,604	1,072	23,715	325	3,807	1,530	8,334	1,303	177	636	2,013	156	3,956	10,456	641
Center	7	2,994	260	3,222	477	9,646	168	1,580	663	4,079	529	84	377	1,424	102	1,728	4,219	401
South	24	3,532	379	4,024	1,200	11,514	169	2,019	1,001	4,227	843	78	559	1,431	119	2,373	4,033	678
Italy	*35*	*13,296*	*1,157*	*13,850*	*2,749*	*44,875*	*662*	*7,406*	*3,194*	*16,640*	*2,675*	*339*	*1,572*	*4,868*	*377*	*8,057*	*18,708*	*1,720*

HC: Hyperbaric Chamber, Echo: Echo-Tomography, CT: Computerized Axial Tomography, HD: Hemodialysis machine, ACCA: Automated Clinical Chemistry Analyzer, MON: Monitor, MRT: Magnetic Resonance Tomography, OT: Operating Table, RU: Radiological Unit, LV: Lung Ventilator, PXU: Portable X-ray Unit, LINAC: Linear Accelerator, RCT: Remote Controlled x-ray Table, AIA: Automated Immunoassay Analyzer, CGC: Computerized Gamma Camera, AM: Anesthesia Machine, SL: Shadowless Lamp, ADC: Automated Differential Cell counter.

Source: *processing by Ermeneia – data from the Ministry of Health*

Table S/11 – Technical and biomedical equipment for diagnosis and treatment in accredited healthcare facilities. Year 2013

Regions	*HC*	*Echo*	*CT*	*HD*	*ACCA*	*MON*	*MRI*	*OT*	*RU*	*LV*	*PXU*	*LINAC*	*RCT*	*AIA*	*CGC*	*AM*	*SL*	*ADC*
– Piedmont	1	119	15	4	27	266	18	59	35	63	30	1	30	31	1	67	78	35
– Aosta Valley	-	1	1	-	1	6	-	2	1	2	1	-	1	1	-	2	4	1
– Lombardy	10	485	51	185	120	1,406	57	242	154	319	95	16	66	96	6	272	524	66
– A.P. of Bolzano	-	7	2	-	1	27	3	-	4	-	-	2	3	2	-	-	-	1
– A.P. of Trento	-	17	3	-	2	11	3	4	7	4	2	-	4	2	-	4	8	4
– Veneto	-	63	8	-	13	148	13	35	25	19	12	-	10	21	-	32	44	14
– Friuli V.G.	-	35	6	25	8	51	5	20	9	13	7	-	5	6	-	20	25	6
– Liguria	-	8	-	2	4	27	-	7	4	16	4	-	4	3	-	9	11	4
– Emilia R.	1	184	22	72	31	429	32	125	58	185	50	3	41	28	3	146	218	25
– Tuscany	-	72	10	25	26	225	7	67	28	91	24	4	18	13	-	72	95	21
– Umbria	-	8	2	-	4	37	2	15	6	10	9	-	5	2	-	16	15	3
– Marche	-	50	8	-	15	92	8	27	21	30	13	-	12	22	1	30	47	10
– Lazio	1	145	38	475	67	547	31	144	96	125	64	4	64	68	8	144	200	69
– Abruzzo	-	57	10	10	20	208	13	31	17	61	14	-	19	21	-	33	53	13
– Molise	-	9	3	1	5	14	1	4	4	4	3	-	4	3	2	6	6	3
– Campania	3	210	52	60	70	568	21	198	101	220	72	4	65	69	17	237	267	79
– Apulia	-	130	22	146	52	362	13	76	42	132	37	2	34	41	2	74	130	35
– Basilicata	-	2	1	-	1	8	1	2	1	-	1	-	1	1	-	4	2	1
– Calabria	-	93	18	3	33	218	10	66	36	98	25	2	26	27	6	75	95	31
– Sicily	2	188	47	16	99	467	32	167	88	194	65	6	62	53	8	193	233	67
– Sardinia	-	47	6	117	16	76	6	36	12	25	12	-	10	12	-	36	39	9
North	12	919	108	288	207	2,371	131	494	297	621	201	22	164	190	10	552	912	156
Center	1	275	58	500	112	901	48	253	151	256	110	8	99	105	9	262	357	103
South	5	736	159	353	296	1,921	97	580	301	734	229	14	221	227	35	658	825	238
Italy	*18*	*1,930*	*325*	*1,141*	*615*	*5,193*	*276*	*1,327*	*749*	*1,611*	*540*	*44*	*484*	*522*	*54*	*1,472*	*2,094*	*497*

HC: Hyperbaric Chamber, Echo: Echo-Tomography, CT: Computerized Axial Tomography, HD: Hemodialysis machine, ACCA: Automated Clinical Chemistry Analyzer, MON: Monitor, MRT: Magnetic Resonance Tomography, OT: Operating Table, RU: Radiological Unit, LV: Lung Ventilator, PXU: Portable X-ray Unit, LINAC: Linear Accelerator, RCT: Remote Controlled x-ray Table, AIA: Automated Immunoassay Analyzer, CGC: Computerized Gamma Camera, AM: Anesthesia Machine, SL: Shadowless Lamp, ADC: Automated Differential Cell counter.

Source: *processing by Ermeneia – data from the Ministry of Health*

Table S/12 – Technical and biomedical equipment for diagnosis and treatment in non-accredited healthcare facilities. Year 2013

Regions	*HC*	*Echo*	*CT*	*HD*	*ACCA*	*MON*	*MRI*	*OT*	*RU*	*LV*	*PXU*	*LINAC*	*RCT*	*AIA*	*CGC*	*AM*	*SL*	*ADC*
– Piedmont	-	26	4	1	4	56	2	28	15	16	5	-	4	3	-	31	35	5
– Lombardy	-	29	4	1	5	80	3	34	16	31	11	-	5	3	2	39	54	7
– A.P. of Bolzano	-	5	2	-	-	38	2	9	8	4	5	-	1	-	-	9	10	1
– A.P. of Trento	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
– Veneto	-	-	-	-	-	3	-	3	-	-	1	-	-	-	-	2	3	-
– Friuli Venezia Giulia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
– Liguria	-	5	2	-	-	23	1	10	3	2	5	-	2	-	-	8	11	1
– Emilia Romagna	-	10	2	-	2	19	1	10	2	3	3	-	2	2	-	10	22	1
– Tuscany	-	20	3	1	2	14	2	12	4	7	3	1	2	1	1	11	11	2
– Umbria	-	2	-	-	-	2	-	3	-	1	-	-	-	-	-	2	2	-
– Marche	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
– Lazio	-	101	24	71	27	267	17	107	40	116	41	4	27	24	5	130	164	40
– Abruzzo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
– Molise	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
– Campania	-	11	3	-	2	20	-	16	3	17	3	1	3	3	-	15	20	4
– Apulia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
– Basilicata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
– Calabria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
– Sicily	-	-	-	-	-	2	-	1	-	1	-	-	-	-	-	2	1	-
– Sardinia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North	-	75	14	2	11	219	9	94	44	56	30	-	14	8	2	99	135	15
Center	-	123	27	72	29	283	19	122	44	124	44	5	29	25	6	143	177	42
South	-	11	3	-	2	22	-	17	3	18	3	1	3	3	-	17	21	4
Italy	-	*209*	*44*	*74*	*42*	*524*	*28*	*233*	*91*	*198*	*77*	*6*	*46*	*36*	*8*	*259*	*333*	*61*

HC: Hyperbaric Chamber, Echo: Echo-Tomography, CT: Computerized Axial Tomography, HD: Hemodialysis machine, ACCA: Automated Clinical Chemistry Analyzer, MON: Monitor, MRT: Magnetic Resonance Tomography, OT: Operating Table, RU: Radiological Unit, LV: Lung Ventilator, PXU: Portable X-ray Unit, LINAC: Linear Accelerator, RCT: Remote Controlled x-ray Table, AIA: Automated Immunoassay Analyzer, CGC: Computerized Gamma Camera, AM: Anesthesia Machine, SL: Shadowless Lamp, ADC: Automated Differential Cell counter.

Source: *processing by Ermeneia – data from the Ministry of Health*

2. Activity data

2.1. In-hospital days and patient bed occupancy rate

The data in Table S/13, which, once again relate to 2013, due to the already mentioned lack of updated Ministerial data, confirms the gradual but progressive decline of the allocations of available patient beds in the hospital system, which went from nearly 220,000 in 2009 to 199,000 in 2013, a decrease of -9.3%. This decrease seems to have affected the accredited private component slightly more (-9.7%), than the public component (-9.2%) as shown by the data in Table S/14.

The number of in-hospital days kept decreasing from 62 million in 2009 to about 56 million in 2013, a decrease of -10%, -10.1% for public facilities, and -9.6% for private facilities; the latter still penalized by regional policies reducing the budgets of the accredited hospital system.

Table S/15 shows a comparison of the 2013 in-hospital stay values with the previous year.

The average overall length of stay remained constant at 8 days and was higher for accredited private healthcare facilities (9 days): the value shown in Table S/15 is mainly due to the influence of long-stay care and rehabilitation. The data changes when considering acute patient cases: in fact, Table S/16 shows that it is down to 7.1 days for public facilities and Table S/18 shows a number of 5.4 days for private facilities.

The overall patient bed occupancy rate, again displayed in Table S/15, was 77% in 2013, consistent with that of the previous year (77.1%).

If we consider only the acute case admissions, the average length of stay remained substantially unchanged in 2013 for both public facilities (Table S/16) and private facilities (Table S/18). At the same time, the occupancy rate tended to decrease for both types of operators (Table S/18).

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2.2. Types of admissions and discharges

A more updated situation of in-hospital days and treated cases may also be deduced from the calculation of hospital discharge records (SDO, Schede di Dimissione Ospedaliera), for which a 2015 consolidated version is available.

These calculations, based again on the CMS 24.0 version of the Medicare DRGs adopted since 2009, provide a very detailed picture of the different service provider components of the National Health Service, along with some of complexity and performance indicators. The results are shown both for the totality of the healthcare institutions, and for AIOP-affiliated facilities, for which a more recent 2016 update is available.

Tables S/20 and S/21 show that over 9,300,000 patients were treated in 2015, of which almost 1.5 million (i.e. 16.6%) were from accredited and non-accredited private healthcare facilities.

It should be recalled that since 2009 the Ministry of Health has incorporated the so-called private obligatorily affiliated institutions (otherwise known as 'publicly assimilated' institutions), such as private polyclinics, private research hospitals (IRCCS), private foundations, religiously affiliated classified hospitals, USL facilities and research facilities, into the column of private data in Table S/20 creating a new 'expanded private' sector which accounts for almost 28.3% of the overall supply in 2015.

The number of in-hospital days for inpatient admissions breaks down to 39 million for public facilities and 15.9 million for the 'expanded private' facilities, whereas the volume of day hospital admissions is 4.8 million and 1.4 million, respectively.

The total of in-hospital days and day admissions for accredited and non-accredited private healthcare facilities alone amounts to more than 11 million, with a ratio of 18.1% of the total, compared to 17.5% in 2012.

The total data in Table S/20 also includes discharges (nearly 375,000) and in-hospital days (more than 1.1 million) related to DRG 491 (normal newborns) that the Ministry of Health does not report in subsequent tables by type of institution.

The number of discharged patients and in-hospital days given by type of institution, type of activity and admissions shows a greater proportional contribution by private hospitals (accredited healthcare facilities) relating to rehabilitation and long-stay care (see Tables S/21 and S/22).

2.3. Prevalent DRGs

The examination carried out on the 2015 hospital discharge records data allows us to observe the activity of the entire hospital sector with no breakdown between public and private operators (Table S/23), while AIOP's regional offices have collected data relating to the part of those activities performed by AIOP-associated facilities, offering a preview of the 2015 results (Table S/24).

The tables mentioned display the top 60 DRGs as they relate to number of discharges for inpatient admissions for acute cases for all hospitals and private hospitals (accredited healthcare facilities), respectively. A North, Central, and South territorial breakdown is also provided for the latter (Tables S/25, S/26 and S/27).

Table S/28 illustrates in-hospital stay activity for acute patients receiving day hospital treatment in public and private healthcare facilities, with reference to the 30 most frequent DRGs. Tables S/29 and S/30 show the DRG classifications of patients who made use of rehabilitation treatment in public and private hospitals as a whole (2015) and, more specifically, in AIOP private hospitals (accredited private healthcare facilities) (2016).

At the combined public/private level, the most common DRG is still childbirth with 289,883 discharges in 2015 (compared to 323,412 units in 2010) amounting to 4.5% of cases (4.4% in 2010) (Table S/23).

On the other hand, in private hospitals (accredited private healthcare facilities) even during 2016, first place was occupied by major joint replacements or lower extremity replantation (58,418 cases, accounting for 7.4% of the sector total).

For the comparison of complexity indicators (average weight and case-mix index) for public institutions and accredited private healthcare facilities, please refer to the specific section of Part One of the Report.

2.4. Activities classified according to major diagnostic categories

Tables S/31 to S/35 contain a more aggregated classification of the same data relating to the analysis of hospital discharge records contained in the tables above, displayed in terms of the Major Diagnostic Categories (MDC) of DRGs, as reported in the hospital discharge records (SDO) of the Ministry of Health.

Inpatient admissions for acute cases are differentiated by illnesses and disorders of the cardiovascular system with 929,239 cases in 2015, compared

to 1,081,067 cases recorded in 2010, and for illnesses and disorders of the musculoskeletal system and connective tissue, with 808,557 cases in 2015 (compared to 904,021 in 2010), as shown by the data in Table S/31.

The greatest average hospital stay (well above the 6.9 days general total) is that for Pre MDC (35.5 days), HIV infections (16.4 days), multiple major trauma (14.1 days), burns (13.3 days), again as shown in Table S/31.

Day hospital activities for acute cases once again display illnesses and disorders of the musculoskeletal system and connective tissue (256,895 cases) (Table S/32).

Rehabilitation activities for inpatient admissions were greatest among illnesses and disorders of the musculoskeletal system and connective tissue (with 139,441 cases), followed by illnesses and disorders of the nervous system (with 74,172 cases) and illnesses and disorders of the cardiovascular system (with 48,554 cases), as shown in Table S/33.

Day hospital admissions for rehabilitation (Table S/34) show a greater concentration for the same diagnostic categories than inpatient admissions, although in a different order: in first place are illnesses and disorders of the nervous system (12,661 cases), second place are illnesses and disorders of the musculoskeletal system and connective tissue (6,621 cases), and finally the cases that fall within the MDC Factors influencing health status and use of health services (6,525 cases).

2.5. Activities classified according to specialty

The variable of making classifications by clinical specialty – which is an interesting method for analyzing the data of hospital facility activities and is regularly shown as such in Table nos. S/36 to S/60 – affected this year by the lack of updated Ministerial data for 2014.

All of the information and related indicators keep providing a kind of real database, again with reference to the year 2013, to be used for information and/or further analysis, since we compare the results of the total activities of the various accredited healthcare facilities to those specifically registered with AIOP both at the national level (Table S/36) and at the level of the individual Regions (Tables S/37 to S/57).

The data are then re-aggregated and divided for large areas of the country (Tables S/58, S/59 and S/60).

2.6. Patient mobility

The final topic of this section is represented, as in several past editions of the Report, by the aspects more properly connected with the characteristics of the hospitalization demand expressed by citizens in correlation with their perception of the quality of care offered by the Regional Health Services; a different and no less interesting interpretation of data on hospital production illustrated in the sections above. The analysis in this case moves to an observation of the dynamics of inter-regional patient flows, developed on the basis of data received from Ministerial mobility matrices.

The analysis of inter-regional healthcare mobility in fact, in addition to playing a key role as a tool for regional planning, helps us to assess, among other things, the propensity of citizens to make use of the principle of free choice that should be guaranteed by our healthcare system.

Table S/61 gives us a picture of the temporal evolution of this propensity, expressing it in terms of synthetic indices of attraction and flight over the last five years available, all completed by a final column showing the most recent net balance of the flow of acute patients entering and leaving their respective territorial areas.

The data extrapolated from the inter-regional mobility matrices taken from the hospital discharge records, this year updated to 2015, show the traditional inflow trend in regions such as Lombardy, constantly in the lead in this ranking with numbers exceeding 70,000 units, Emilia Romagna, Tuscany, Veneto, Umbria, and Friuli Venezia Giulia. Also appearing to be confirmed is the marked tendency to receive hospital care from other regional systems, evidently considered more reliable and more accessible, shown over time by the people of Campania, Calabria, Sicily, Abruzzo, Lazio, and Sardinia.

The phenomenon of mobility, as has often been pointed out, continues to be a sensitive topic in the debate on the reorganization of the hospital network, as is that of the freedom to choose the place for treatment. All of this increasingly motivates some Regions to sign agreements with the health systems of neighboring areas (but not only) in order to bring the flows of patients under control. The State-Regions Conference has recently intervened to guide the behavior of the most attractive regions, cutting the financial allocation by 50% relative to the increases in flows recorded in the two-year period 2014-2015 in the accredited sector. Regional AIOP presidents were also solicited on this topic, in order to gain an understanding of the feelings of citizens and to assess the impact on incoming mobility flows.

The issue of patient mobility, the measures already taken or under consideration to keep it under control and the sensitive issues related to the right to free choice, are discussed more in detail in a specific sections in Part One of this Report.

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Table S/13 – Patient beds, in-hospital days, and occupancy rate – Inpatient admissions

	2009			2010			2011			2012			2013		
	Patient beds	*In-hospital days*	*O.R. %*	*Patient beds*	*In-hospital days*	*O.R. %*	*Patient beds*	*In-hospital days*	*O.R. %*	*Patient beds*	*In-hospital days*	*O.R. %*	*Patient beds*	*In-hospital days*	*O.R. %*
Public	172,718	50,836,854	80.6	168,926	50,114,576	81.3	166,544	48,492,926	79.8	161,653	47,155,798	79.9	156,762	45,685,829	79.8
Accred. private	46,686	11,281,737	66.2	45,622	10,945,990	65.7	44,487	10,688,865	65.8	42,970	10,422,856	66.5	42,142	10,202,409	66.3
Total	219,404	62,118,591		214,548	61,060,566		211,031	59,181,791		204,623	57,578,654		198,904	55,888,238	
	%	%		%	%		%	%		%	%		%	%	
Public	78.7	81.8		78.7	82.1		78.9	81.9		79.0	81.9		78.8	81.7	
Accred. private	21.3	18.2		21.3	17.9		21.1	18.1		21.0	18.1		21.2	18.3	
Total	*100.0*	*100.0*		*100.0*	*100.0*		*100.0*	*100.0*		*100.0*	*100.0*		*100.0*	*100.0*	

Source: *processing by Ermeneia of data included in the Report "Attività gestionali ed economiche delle Usl e Aziende Ospedaliere", Ministry of Health, Years 2009, 2010, 2011, 2012 and 2013*

Table S/14 – Annual increase of activity, patient beds, and in-hospital days

	2010/2009		2011/2010		2012/2011		2013/2012		2013/2009	
	Patient beds	*In-hospital days*	*Patient beds*	*In-hospital days*	*Patient beds*	*In-hospital days*	*In-hospital days*	*In-hospital days*	*In-hospital days*	*In-hospital days*
Public	-2.2	-1.4	-1.4	-3.2	-2.9	-2.8	-3.0	-3.1	-9.2	-10.1
Accred. private	-2.3	-3.0	-2.5	-2.3	-3.4	-2.5	-1.9	-2.1	-9.7	-9.6
Total	*-2.2*	*-1.7*	*-1.6*	*-3.1*	-3.0	-2.7	-2.8	-2.9	-9.3	-10.0

Source: *processing by Ermeneia of data included in the Report "Attività gestionali ed economiche delle Usl e Aziende Ospedaliere", Ministry of Health, Years 2009, 2010, 2011, 2012 and 2013*

Table S/15 – Public and accredited private institutions – Activity data for inpatient admissions. 2013

Type of institution	2013					2012	
	Patient beds	*Discharged pts*	*Days*	*Average length of stay*	*Occupancy rate %*	*Average length of stay*	*Occupancy rate %*
– Total public and assimilated institutions	156,762	5,879,708	45,685,829	7.8	79.8	7.8	79.9
– Private accredited healthcare facilities	42,142	1,136,424	10,202,409	9.0	66.3	9.0	66.5
Total public and accredited private institutions	198,904	7,016,132	55,888,238	8.0	77.0	8.0	77.1

Source: *processing by Ermeneia – data from the Ministry of Health*

Table S/16 – Activities of acute hospital-stay (*) in public hospital facilities, by region. Year 2013 and comparison with the year 2011

Regions	Patient beds actually used	Admissions	In-hospital days	2013			2011		
				Average length of stay	Occupancy rate (%)	Hospitalization rate (per 1,000 inhab.)	Average length of stay	Occupancy rate (%)	Hospitalization rate (per 1,000 inhab.)
– Piedmont	10,758	383,198	2,925,216	7.6	74.5	87.6	7.7	77.8	93.4
– Aosta Valley	428	14,748	113,033	7.7	72.4	115.4	8.4	78.7	114.1
– Lombardy	23,621	962,330	6,837,352	7.1	79.3	98.3	7.2	80.9	104.5
– A.P. of Bolzano	1,616	63,819	431,025	6.8	73.1	125.2	6.7	76.5	131.1
– A.P. of Trento	1,315	47,295	364,855	7.7	76.0	89.2	7.7	97.4	137.3
– Veneto	13,021	448,061	3,614,343	8.1	76.0	91.8	8.1	76.1	95.8
– Friuli V.G.	3,653	130,320	970,378	7.4	72.8	106.7	7.6	70.8	107.9
– Liguria	4,408	169,053	1,340,071	7.9	83.3	108.0	8.4	62.7	103.7
– Emilia R.	11,295	471,636	3,100,207	6.6	75.2	107.7	6.7	76.2	112.9
– Tuscany	9,251	384,296	2,506,923	6.5	74.2	104.1	6.6	76.3	111.2
– Umbria	2,353	109,501	699,612	6.4	81.5	123.6	6.2	82.9	127.6
– Marche	3,886	149,203	1,102,798	7.4	77.7	96.6	7.3	77.8	107.7
– Lazio	13,042	526,590	3,937,499	7.5	82.7	94.8	7.7	82.8	92.1
– Abruzzo	3,033	123,541	899,763	7.3	81.3	94.1	7.3	85.7	100.1
– Molise	824	36,977	262,997	7.1	87.4	118.0	7.1	89.6	131.5
– Campania	9,899	433,646	2,911,759	6.7	80.6	75.2	6.6	76.5	78.6
– Apulia	8,989	413,949	2,766,050	6.7	84.3	102.2	6.6	80.6	111.8
– Basilicata	1,422	55,805	385,415	6.9	74.3	96.9	6.9	70.3	100.7
– Calabria	3,126	135,084	921,315	6.8	80.7	69.0	6.8	76.1	80.6
– Sicily	9,697	405,120	2,811,350	6.9	79.4	81.0	6.8	79.8	87.0
– Sardinia	4,528	163,203	1,119,198	6.9	67.7	99.5	7.0	70.4	109.9
North	70,115	2,690,460	19,696,480	7.3	77.0	98.3	7.5	77.1	103.8
Center	28,532	1,169,590	8,246,832	7.1	79.2	100.1	7.1	79.9	102.9
South	41,518	1,767,325	12,077,847	6.8	79.7	85.7	6.8	78.1	92.6
Italy	*140,165*	*5,627,375*	*40,021,159*	*7.1*	*78.2*	*94.3*	*7.2*	*78.0*	*99.7*

(*) The following specialties are excluded: 22 – Residual mental health facilities, 28: Spinal care unit, 56 – Functional recovery and rehabilitation, 60 – Long-stay care pts, 75 – Neurological rehabilitation.

Note: latest Ministry data available at the date of publication of the Report.

Source: *data from the Ministry of Health*

Table S/17 – Activities of non-acute hospital stay (*) in public hospital facilities, by region. Year 2013 and comparison with the year 2011

Regions	*Patient beds actually occupied*	*Admissions*	*In-hospital days*	*2013*		*2011*	
				Average length of stay	*Occupancy rate (%)*	*Average length of stay*	*Occupancy rate (%)*
– Piedmont	2,144	23,173	656,606	28.3	83.9	29.0	89.9
– Aosta Valley	25	157	3,895	24.8	42.7	-	-
– Lombardy	3,800	52,018	1,267,088	24.4	91.4	23.9	89.6
– A.P. of Bolzano	78	1,051	19,973	19.0	70.2	23.2	87.8
– A.P. of Trento	101	1,256	37,691	30.0	102.2	29.4	125.3
– Veneto	2,178	26,666	677,600	25.4	85.2	25.8	84.2
– Friuli V.G.	304	4,193	111,995	26.7	100.9	28.7	90.5
– Liguria	803	12,895	251,428	19.5	85.8	21.6	69.1
– Emilia Romagna	1,931	26,408	855,464	32.4	121.4	35.4	122.6
– Tuscany	530	6,860	161,169	23.5	83.3	21.4	82.7
– Umbria	276	3,719	95,109	25.6	94.4	24.5	90.9
– Marche	494	7,411	138,688	18.7	76.9	24.3	76.5
– Lazio	1,239	11,842	424,752	35.9	93.9	42.3	94.8
– Abruzzo	268	3,630	61,380	16.9	62.7	16.8	61.8
– Molise	171	1,732	50,554	29.2	81.0	32.9	82.4
– Campania	405	4,454	129,588	29.1	87.7	28.1	82.9
– Apulia	714	8,397	209,416	24.9	80.4	26.0	61.1
– Basilicata	223	2,110	60,327	28.6	74.1	35.4	67.4
– Calabria	60	1,128	17,700	15.7	80.8	18.6	65.0
– Sicily	953	6,867	249,427	36.3	71.7	42.6	73.5
– Sardinia	122	995	36,923	37.1	82.9	35.1	65.5
North	11,364	147,817	3,881,740	26.3	93.6	27.2	93.7
Center	2,539	29,832	819,718	27.5	88.5	30.7	88.8
South	2,916	29,313	815,315	27.8	76.6	28.4	69.0
Italy	*16,819*	*206,962*	*5,516,773*	*26.7*	*89.9*	*27.8*	*88.7*

(*) The following specialties are included: 22 – Residual mental health facilities, 28: Spinal care unit, 56 – Functional recovery and rehabilitation, 60 – Long-stay care pts, 75 – Neurological rehabilitation.

Note: latest Ministry data available at the date of publication of the Report.

Source: *data from the Ministry of Health*

Table S/18 – Activities of acute hospital-stay (*) in private hospitals (accredited healthcare facilities), by region. Year 2013 and comparison with the year 2011

Regions	Patient beds actually occupied	Admissions	In-hospital days	2013			2011		
				Average length of stay	Occupancy rate (%)	Hospitalization rate (per 1,000 inhab.)	Average length of stay	Occupancy rate (%)	Hospitalization rate (per 1,000 inhab.)
– Piedmont	940	36,410	142,188	3.9	41.4	8.3	4.8	41.5	8.8
– Aosta Valley	10	772	1,324	1.7	36.3	6.0	-	-	-
– Lombardy	4,477	205,325	971,421	4.7	59.4	21.0	4.8	60.5	20.9
– A.P. of Bolzano	31	741	7,658	10.3	67.7	1.5	12.7	68.6	2.9
– A.P. of Trento	104	2,808	18,671	6.6	49.2	5.3	6.5	53.2	5.3
– Veneto	735	17,888	202,534	11.3	75.5	3.7	11.0	82.2	4.1
– Friuli V.G.	332	7,568	39,963	5.3	33.0	6.2	6.0	28.3	5.0
– Liguria	60	1,724	9,370	5.4	42.8	1.1	6.1	57.2	0.9
– Emilia R.	2,619	89,847	507,984	5.7	53.1	20.5	6.0	55.1	21.8
– Tuscany	972	33,368	171,332	5.1	48.3	9.0	5.5	43.2	8.5
– Umbria	181	6,018	17,707	2.9	26.8	6.8	3.0	25.8	7.1
– Marche	448	18,250	85,744	4.7	52.4	11.8	5.0	53.4	12.2
– Lazio	2,464	76,876	494,196	6.4	54.9	13.8	7.6	62.1	14.8
– Abruzzo	555	22,631	129,796	5.7	64.1	17.2	5.8	55.4	14.2
– Molise	80	2,672	14,725	5.5	50.4	8.5	6.0	53.3	8.3
– Campania	4,305	177,900	1,002,651	5.6	63.8	30.8	5.7	66.7	34.7
– Apulia	1,591	80,092	364,028	4.5	62.7	19.8	4.6	62.7	20.9
– Basilicata	50	1,640	5,653	3.4	31.0	2.8	3.6	18.5	1.6
– Calabria	902	35,529	172,291	4.8	52.3	18.1	5.4	47.9	22.8
– Sicily	2,918	92,294	520,289	5.6	48.9	18.5	5.5	49.7	21.0
– Sardinia	780	21,713	108,395	5.0	38.1	13.2	5.6	35.1	13.9
North	9,308	363,083	1,901,113	5.2	56.0	13.3	5.5	57.0	13.5
Center	4,065	134,512	768,979	5.7	51.8	11.5	6.6	55.0	11.9
South	11,181	434,471	2,317,828	5.3	56.8	21.1	5.4	56.6	23.2
Italy	*24,554*	*932,066*	*4,987,920*	*5.4*	*55.7*	*15.6*	*5.6*	*56.5*	*16.6*

(*) The following specialties are excluded: 22 – Residual mental health facilities, 28: Spinal care unit, 56 – Functional recovery and rehabilitation, 60 – Long-stay care pts, 75 – Neurological rehabilitation.

Note: latest Ministry data available at the date of publication of the Report.

Source: *data from the Ministry of Health*

Table S/19 – Activities of non-acute hospital stay (*) in private hospitals (accredited healthcare facilities), by region. Year 2013 and comparison with the year 2011

Regions	*Patient beds actually occupied*	*Admissions*	*In-hospital days*	*2013*		*2011*	
				Average length of stay	*Occupancy rate (%)*	*Average length of stay*	*Occupancy rate (%)*
– Piedmont	2,405	21,461	640,642	29.9	73.0	32.7	66.3
– Aosta Valley	64	770	15,461	20.1	66.2	22.3	58.0
– Lombardy	3,427	49,357	1,161,323	23.5	92.8	23.9	93.4
– A.P. of Bolzano	231	3,610	88,334	24.5	104.8	24.9	99.1
– A.P. of Trento	428	7,534	167,329	22.2	107.1	23.0	100.1
– Veneto	423	5,820	130,250	22.4	84.4	22.3	90.2
– Friuli V.G.	96	895	19,428	21.7	55.4	21.9	68.4
– Liguria	123	2,868	31,530	11.0	70.2	12.9	75.2
– Emilia Romagna	1,697	27,072	594,658	22.0	96.0	22.4	97.6
– Tuscany	583	7,059	178,227	25.2	83.8	22.8	74.9
– Umbria	32	495	5,966	12.1	51.1	12.7	57.7
– Marche	415	4,191	130,940	31.2	86.4	30.8	88.4
– Lazio	1,953	21,573	641,686	29.7	90.0	34.4	82.7
– Abruzzo	445	5,476	138,376	25.3	85.2	26.9	81.6
– Molise	60	479	11,702	24.4	53.4	29.7	73.7
– Campania	1,406	10,051	356,451	35.5	69.5	38.1	85.8
– Apulia	694	8,847	205,265	23.2	81.0	22.5	81.6
– Basilicata	99	915	31,506	34.4	87.2	33.7	50.8
– Calabria	792	6,962	186,716	26.8	64.6	31.5	73.1
– Sicily	799	11,589	253,668	21.9	87.0	21.5	81.6
– Sardinia	224	3,090	60,282	19.5	73.7	20.9	69.4
North	8,894	119,387	2,848,955	23.9	87.8	24.5	86.9
Center	2,983	33,318	956,819	28.7	87.9	31.4	81.9
South	4,519	47,409	1,243,966	26.2	75.4	27.3	79.8
Italy	*16,396*	*200,114*	*5,049,740*	*25.2*	*84.4*	*26.5*	*83.9*

(*) The following specialties are included: 22 – Residual mental health facilities, 28: Spinal care unit, 56 – Functional recovery and rehabilitation, 60 – Long-stay care pts, 75 – Neurological rehabilitation.

Note: latest Ministry data available at the date of publication of the Report.

Source: *data from the Ministry of Health*

Table S/20 – Hospital Discharge Records (SDO): recorded activity, national grand total, and totals for public and private institutions – Discharged pts and in-hospital days. Year 2015

	Number of cases			*In-hospital days*		
	Public	*Private*	*Total*	*Public*	*Private*	*Total*
– Inpatient admissions for acute cases	4,892,583	1,505,451	6,398,034	35,656,207	8,172,986	43,829,193
– Day hospital for acute cases	1,502,550	567,273	2,069,823	4,594,485	1,117,742	5,712,227
– Rehabilitation for inpatient admissions	78,984	239,323	318,307	1,974,039	6,351,979	8,326,018
– Rehabilitation – Day hospital	15,071	19,035	34,106	169,511	317,695	487,206
– Long-stay care	56,631	54,078	110,709	1,426,823	1,585,206	3,012,029
– Normal newborns(1)	297,079	77,548	374,627	907,444	237,034	1,144,478
Total	*6,842,898*	*2,462,708*	*9,305,606*	44,728,509	*17,782,642*	*62,511,151*

Public institutions: Hospital Centers, University Hospital Centers and Public Polyclinics, Public I.R.C.C.S. and Public Foundations, Directly Managed Hospitals.
Private institutions: Private Polyclinics, Private I.R.C.C.S. and Private Foundations, Classified Hospitals, USL Facilities, Research Facilities, Accredited Private Healthcare Facilities.
The item "Long-stay care" includes discharged pts from inpatient admissions and day-hospital.
(1) Classified in the DRG 391.
Source: *data from the Ministry of Health – SDO 2015*

Table S/21 – Distribution of discharged pts classified according to type of institution, activity, and admissions. Year 2015

Type of institution	*Acute*				*Rehabilitation*					
	Inpatient admissions		*Day hospital*		*Inpatient admissions*		*Day hospital*		*Long-stay care*	
	Number	*%*	*Number*	*%*	*Number*	*%*	*Number*	*%*	*Number*	*%*
– Public institutions and equivalents	5,460,055	85.3	1,755,104	84.8	150,211	47.2	24,045	70.5	58,938	53.2
– Private hospitals (accredited healthcare facilities)	882,995	13.8	303,253	14.6	168,031	52.8	10,061	29.5	51,491	46.5
– Private healthcare facilities	54,984	0.9	11,466	0.6	65	0.0	-	0.0	280	0.3
Total	*6,398,034*	*100.0*	*2,069,823*	*100.0*	*318,307*	*100.0*	*34,106*	*100.0*	*110,709*	*100.0*

Source: *data from the Ministry of Health – SDO 2015*

Table S/22 – Distribution of in-hospital days classified according to type of institution, activity, and admissions. Year 2015

Type of institution	*Acute*				*Rehabilitation*					
	Inpatient admissions		*Day hospital*		*Inpatient admissions*		*Day hospital*		*Long-stay care*	
	Number	*%*	*Number*	*%*	*Number*	*%*	*Number*	*%*	*Number*	*%*
– Public institutions and equivalents	39,257,100	89.6	5,185,821	90.8	4,023,161	48.3	299,239	61.4	1,490,124	49.5
– Private hospitals (accredited healthcare facilities)	4,384,105	10.0	514,330	9.0	4,301,755	51.7	187,967	38.6	1,513,133	50.2
– Private healthcare facilities	187,988	0.4	12,076	0.2	1,102	0.0	-	0.0	8,772	0.3
Total	*43,829,193*	*100.0*	*5,712,227*	*100.0*	*8,326,018*	*100.0*	*487,206*	*100.0*	*3,012,029*	*100.0*

Source: *data from the Ministry of Health – SDO 2015*

Table S/23 – Total number of public and private healthcare facilities: top 60 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for acute cases. Year 2015

Rank		DRG	Discharges			% In-hospital days	Average length of stay
			Number	%	% cumul,		
1	373	Vaginal Delivery W/O Complicating Diagnoses	289,883	4.5	4.5	2.3	3.4
2	127	Heart Failure & Shock	184,719	2.9	7.4	3.9	9.2
3	544	Major Joint Replacement or Reattachment of Lower Extremity	156,897	2.5	9.9	3.2	8.9
4	371	Cesarean Section W/O Cc	155,679	2.4	12.3	1.6	4.6
5	087	Pulmonary Edema & Respiratory Failure	147,802	2.3	14.6	3.3	9.8
6	359	Uterine & Adnexa Proc For Non-Malignancy W/O Cc	100,874	1.6	16.2	0.9	3.7
7	014	Intracranial Hemorrhage or Cerebral Infarction	93,261	1.5	17.6	2.1	10.0
8	430	Psychoses	82,626	1.3	18.9	2.5	13.1
9	494	Laparoscopic Cholecystectomy W/O C.D.E. W/O Cc	81,361	1.3	20.2	0.7	3.6
10	089	Simple Pneumonia & Pleurisy Age >17 W Cc	80,895	1.3	21.5	2.1	11.1
11	316	Renal Failure	77,591	1.2	22.7	1.7	9.5
12	125	Circulatory Disorders Except Ami, W Card Cath W/O Complex Diag	63,118	1.0	23.7	0.5	3.4
13	576	Septicemia W/O Mv96 + Hours Age >17	62,977	1.0	24.7	1.9	12.9
14	311	Transurethral Procedures W/O Cc	61,850	1.0	25.6	0.5	3.5
15	183	Esophagitis, Gastroent & Misc Digest Disorders Age >17 W/O Cc	59,432	0.9	26.6	0.7	4.9
16	557	Percutaneous Cardiovascular Proc W Drug-Eluting Stent W Major Cv Dx	55,284	0.9	27.4	0.9	7.4
17	503	Knee Procedures W/O Pdx of Infection	54,009	0.8	28.3	0.2	1.9
18	410	Chemotherapy W/O Acute Leukemia as Secondary Diagnosis	53,693	0.8	29.1	0.6	4.5
19	225	Foot Procedures	52,222	0.8	29.9	0.2	2.0
20	390	Neonate W Other Significant Problems	51,165	0.8	30.7	0.5	4.0
21	219	Lower Extrem & Humer Proc Except Hip,Foot,Femur Age >17 W/O Cc	50,805	0.8	31.5	0.8	6.7
22	162	Inguinal & Femoral Hernia Procedures Age >17 W/O Cc	49,532	0.8	32.3	0.2	1.9
23	558	Percutaneous Cardiovascular Proc W Drug-Eluting Stent W/O Maj Cv Dx	46,922	0.7	33.0	0.4	4.1
24	467	Other Factors Influencing Health Status	44,716	0.7	33.7	0.3	2.9
25	524	Transient Ischemia	41,878	0.7	34.4	0.7	6.8
26	082	Respiratory Neoplasms	41,729	0.7	35.0	0.9	10.0
27	203	Malignancy of Hepatobiliary System or Pancreas	40,609	0.6	35.7	0.9	9.2
28	211	Hip & Femur Procedures Except Major Joint Age >17 W/O Cc	40,437	0.6	36.3	0.9	10.2
29	224	Shoulder,Elbow or Forearm Proc,Exc Major Joint Proc, W/O Cc	40,093	0.6	36.9	0.3	3.0
30	088	Chronic Obstructive Pulmonary Disease	39,931	0.6	37.5	0.8	8.6
31	395	Red Blood Cell Disorders Age > 17	38,100	0.6	38.1	0.7	8.4
32	184	Esophagitis, Gastroent & Misc Digest Disorders Age 0-17	37,711	0.6	38.7	0.3	3.2
33	290	Thyroid Procedures	35,743	0.6	39.3	0.3	3.3

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(Continued) *Table S/23 – Total number of public and private healthcare facilities: top 60 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for acute cases. Year 2015*

Rank		DRG	Discharges			% In-hospital days	Average length of stay
			Number	%	% cumul,		
34	139	Cardiac Arrhythmia & Conduction Disorders W/O Cc	35,723	0.6	39.8	0.3	3.8
35	381	Abortion W D&C, Aspiration Curettage or Hysterotomy	35,678	0.6	40.4	0.1	1.6
36	158	Anal & Stomal Procedures W/O Cc	35,330	0.6	41.0	0.2	2.2
37	552	Other Permanent Cardiac Pacemaker Implant W/O Major Cv Dx	35,180	0.5	41.5	0.4	5.2
38	149	Major Small & Large Bowel Procedures W/O CC	33,697	0.5	42.0	0.8	10.1
39	055	Miscellaneous Ear, Nose, Mouth & Throat Procedures	33,623	0.5	42.6	0.2	2.1
40	090	Simple Pneumonia & Pleurisy Age >17 W/O Cc	32,627	0.5	43.1	0.6	8.6
41	298	Nutritional & Misc Metabolic Disorders Age 0-17	32,543	0.5	43.6	0.3	3.6
42	500	Back & Neck Procedures Except Spinal Fusion W/O Cc	32,437	0.5	44.1	0.3	4.1
43	012	Degenerative Nervous System Disorders	31,923	0.5	44.6	0.6	8.3
44	124	Circulatory Disorders Except Ami, W Card Cath & Complex Diag	31,486	0.5	45.1	0.5	6.9
45	518	Surg Perc Cardio Proc W/O Coronary Artery Stent or AMI	31,302	0.5	45.6	0.3	3.6
46	379	Threatened Abortion	31,286	0.5	46.1	0.3	4.6
47	337	Transurethral Prostatectomy W/O Cc	31,099	0.5	46.5	0.3	4.4
48	202	Cirrhosis & Alcoholic Hepatitis	30,147	0.5	47.0	0.7	10.1
49	210	Hip & Femur Procedures Except Major Joint Age >17 W Cc	30,123	0.5	47.5	0.9	13.2
50	208	Disorders of The Biliary Tract W/O Cc	30,072	0.5	47.9	0.5	6.6
51	260	Subtotal Mastectomy For Malignancy W/O Cc	27,833	0.4	48.4	0.1	2.3
52	243	Medical Back Problems	26,545	0.4	48.8	0.4	6.2
53	098	Bronchitis & Asthma Age 0-17	26,015	0.4	49.2	0.3	4.4
54	138	Cardiac Arrhythmia & Conduction Disorders W Cc	25,994	0.4	49.6	0.4	6.4
55	143	Chest Pain	25,789	0.4	50.0	0.2	3.5
56	389	Full Term Neonate W Major Problems	25,707	0.4	50.4	0.4	6.8
57	227	Soft Tissue Procedures W/O Cc	25,402	0.4	50.8	0.2	2.6
58	174	G.I. Hemorrhage W Cc	25,399	0.4	51.2	0.5	9.0
59	538	Local Excis & Remov of Int Fix Dev Except Hip & Femur W/O Cc	25,367	0.4	51.6	0.2	2.7
60	204	Disorders of Pancreas Except Malignancy	25,280	0.4	52.0	0.5	9.2
		Total (top 60 DRGs)	*3,327,151*	*52.0*		*47.9*	
		Grand Total	*6,398,034*	*100.0*		*100.0*	*6.9*

Source: *data from the Ministry of Health – SDO 2015*

Table S/24 – AIOP Private hospitals (accredited healthcare facilities): top 60 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for acute cases. Year 2016

Rank		DRG	Discharges			% In-hospital days	Average length of stay	In-hospital days
			Number	%	% cumul,			
1	544	Major Joint Replacement or Reattachment of Lower Extremity	58,418	7.4	7.4	7.8	6.6	385,576
2	503	Knee Procedures W/O Pdx of Infection	27,147	3.5	10.9	1.0	1.8	48,510
3	225	Foot Procedures	22,881	2.9	13.8	0.7	1.4	32,697
4	039	Lens Procedures With Or Without Vitrectomy	21,957	2.8	16.6	2.0	4.5	99,881
5	371	Cesarean Section W/O Cc	18,463	2.3	18.9	1.5	4.1	75,381
6	127	Heart Failure & Shock	17,135	2.2	21.1	3.1	9.0	153,918
7	359	Uterine & Adnexa Proc For Non-Malignancy W/O Cc	16,717	2.1	23.2	1.1	3.1	52,244
8	373	Vaginal Delivery W/O Complicating Diagnoses	14,338	1.8	25.0	1.0	3.4	48,427
9	494	Laparoscopic Cholecystectomy W/O C.D.E. W/O Cc	13,093	1.7	26.7	0.7	2.7	35,985
10	430	Psychoses	11,833	1.5	28.2	6.5	27.4	324,710
11	125	Circulatory Disorders Except Ami, W Card Cath W/O Complex Diag	11,634	1.5	29.7	0.6	2.4	28,442
12	162	Inguinal & Femoral Hernia Procedures Age >17 W/O Cc	11,011	1.4	31.1	0.5	2.4	26,165
13	311	Transurethral Procedures W/O Cc	10,413	1.3	32.4	0.6	2.9	29,840
14	224	Shoulder,Elbow or Forearm Proc,Exc Major Joint Proc, W/O Cc	10,381	1.3	33.7	0.4	2.0	20,401
15	288	O.R. Procedures For Obesity	9,458	1.2	34.9	0.8	4.0	37,996
16	410	Chemotherapy W/O Acute Leukemia As Secondary Diagnosis	9,347	1.2	36.1	11.8	62.6	584,835
17	223	Major Shoulder/Elbow Proc, or Other Upper Extremity Proc W Cc	9,037	1.1	37.3	0.3	1.6	14,587
18	158	Anal & Stomal Procedures W/O Cc	8,531	1.1	38.4	0.4	2.1	18,011
19	500	Back & Neck Procedures Except Spinal Fusion W/O Cc	8,336	1.1	39.4	0.5	3.1	26,198
20	498	Spinal Fusion Except Cervical W/O Cc	8,054	1.0	40.4	0.7	4.6	36,797
21	518	Perc Cardio Proc W/O Coronary Artery Stent or AMI	7,478	1.0	41.4	0.5	3.3	24,663
22	087	Pulmonary Edema & Respiratory Failure	7,477	1.0	42.3	1.4	9.0	67,214
23	558	Percutaneous Cardiovascular Proc W Drug-Eluting Stent W/O Maj Cv Dx	7,470	0.9	43.3	0.5	3.4	25,238
24	337	Transurethral Prostatectomy W/O Cc	7,241	0.9	44.2	0.6	3.9	28,095
25	183	Esophagitis, Gastroent & Misc Digest Disorders Age >17 W/O Cc	6,977	0.9	45.1	0.7	4.8	33,386
26	467	Other Factors Influencing Health Status	6,344	0.8	45.9	1.1	8.2	52,101
27	227	Soft Tissue Procedures W/O Cc	6,253	0.8	46.7	0.2	1.6	10,138
28	479	Other Vascular Procedures W/O Cc	6,079	0.8	47.5	0.4	3.2	19,566
29	538	Local Excis & Remov of Int Fix Dev Except Hip & Femur W/O Cc	5,794	0.7	48.2	0.2	2.0	11,608

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(Continued) *Table S/24 – AIOP Private hospitals (accredited healthcare facilities): top 60 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for acute cases. Year 2016*

Rank		DRG	Discharges			% In-hospital days	Average length of stay	In-hospital days
			Number	%	% cumul,			
30	012	Degenerative Nervous System Disorders	5,757	0.7	48.9	1.1	9.8	56,540
31	297	Nutritional & Misc Metabolic Disorders Age >17 W/O Cc	5,694	0.7	49.7	0.5	4.7	26,641
32	234	Other Musculoskelet Sys & Conn Tiss O.R. Proc W/O Cc	5,091	0.6	50.3	0.2	2.1	10,703
33	229	Hand or Wrist Proc, Except Major Joint Proc, W/O Cc	5,080	0.6	51.0	0.1	1.2	5,868
34	219	Lower Extrem & Humer Proc Except Hip, Foot, Femur Age >17 W/O Cc	4,945	0.6	51.6	0.4	4.4	21,906
35	232	Arthroscopy	4,816	0.6	52.2	0.1	1.2	5,873
36	290	Thyroid Procedures	4,588	0.6	52.8	0.3	2.8	12,970
37	104	Cardiac Valve & Oth Major Cardiothoracic Proc W Card Cath	4,512	0.6	53.3	1.2	13.0	58,443
38	089	Simple Pneumonia & Pleurisy Age >17 W Cc	4,490	0.6	53.9	1.0	10.9	49,080
39	119	Vein Ligation & Stripping	4,357	0.6	54.5	0.1	1.5	6,583
40	055	Miscellaneous Ear, Nose, Mouth & Throat Procedures	4,239	0.5	55.0	0.2	1.8	7,581
41	316	Renal Failure	4,190	0.5	55.5	0.7	8.3	34,638
42	160	Hernia Procedures Except Inguinal & Femoral Age >17 W/O Cc	4,148	0.5	56.1	0.2	2.7	11,138
43	088	Chronic Obstructive Pulmonary Disease	3,948	0.5	56.6	0.6	7.9	31,235
44	014	Intracranial Hemorrhage or Cerebral Infarction	3,929	0.5	57.1	0.7	8.8	34,491
45	524	Transient Ischemia	3,881	0.5	57.6	0.6	7.3	28,169
46	545	Revision Of Hip Or Knee Replacement	3,778	0.5	58.0	0.6	8.5	32,052
47	139	Cardiac Arrhythmia & Conduction Disorders W/O Cc	3,719	0.5	58.5	0.3	3.5	13,076
48	149	Major Small & Large Bowel Procedures W/O Cc	3,578	0.5	59.0	0.6	7.7	27,415
49	552	Other Permanent Cardiac Pacemaker Implant W/O Major Cv Dx	3,476	0.4	59.4	0.3	4.5	15,698
50	211	Hip & Femur Procedures Except Major Joint Age >17 W/O Cc	3,416	0.4	59.8	0.5	7.4	25,306
51	053	Sinus & Mastoid Procedures Age >17	3,382	0.4	60.3	0.1	2.0	6,708
52	082	Respiratory Neoplasms	3,255	0.4	60.7	0.5	7.9	25,691
53	143	Chest Pain	3,209	0.4	61.1	0.2	2.7	8,505
54	339	Testes Procedures, Non-Malignancy Age >17	3,121	0.4	61.5	0.1	2.1	6,488
55	008	Periph & Cranial Nerve & Other Nerv Syst Proc W/O Cc	3,102	0.4	61.9	0.1	1.7	5,252
56	305	Kidney, Ureter & Major Bladder Procedures For Non-Neoplasm W/O Cc	3,025	0.4	62.3	0.2	3.9	11,679
57	557	Percutaneous Cardiovascular Proc W Drug-Eluting Stent W Major Cv Dx	3,022	0.4	62.7	0.4	7.1	21,466
58	491	Major Joint & Limb Reattachment Procedures of Upper Extremity	2,974	0.4	63.0	0.3	4.7	14,040
59	017	Nonspecific Cerebrovascular Disorders W/O Cc	2,959	0.4	63.4	0.8	12.9	38,094
60	243	Medical Back Problems	2,951	0.4	63.8	0.3	5.7	16,964
	Total (top 60 DRG)		*501,929*	*63.8*			*6.0*	*3,022,903*
	Grand Total		*786,863*				*6.3*	*4,961,215*

Source: *processing by Ermeneia – data from AIOP*

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Table S/25 – AIOP Private hospitals (accredited healthcare facilities): top 60 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for acute cases in the North of Italy. Year 2016

Rank	DRG		Discharges			% In-hospital days	Average length of stay	In-hospital days
			Number	%	% cumul,			
1	544	Major Joint Replacement or Reattachment of Lower Extremity	31,431	9.1	9.1	10.3	6.4	201,104
2	503	Knee Procedures W/O Pdx of Infection	15,553	4.5	13.5	1.1	1.4	21,136
3	225	Foot Procedures	14,014	4.0	17.6	0.9	1.2	17,162
4	224	Shoulder, Elbow or Forearm Proc, Exc Major Joint Proc, W/O Cc	6,950	2.0	19.6	0.6	1.7	12,088
5	359	Uterine & Adnexa Proc For Non-Malignancy W/O Cc	6,651	1.9	21.5	0.9	2.7	17,760
6	288	O.R. Procedures For Obesity	6,419	1.9	23.4	1.3	3.8	24,680
7	127	Heart Failure & Shock	6,331	1.8	25.2	3.2	10.0	63,351
8	518	Perc Cardio Proc W/O Coronary Artery Stent or Ami	5,930	1.7	26.9	1.0	3.4	20,278
9	430	Psychoses	5,524	1.6	28.5	7.1	25.0	138,327
10	311	Transurethral Procedures W/O Cc	5,033	1.5	29.9	0.7	2.5	12,775
11	158	Anal & Stomal Procedures W/O Cc	4,762	1.4	31.3	0.3	1.4	6,479
12	125	Circulatory Disorders Except Ami, W Card Cath W/O Complex Diag	4,523	1.3	32.6	0.6	2.6	11,563
13	162	Inguinal & Femoral Hernia Procedures Age >17 W/O Cc	4,506	1.3	33.9	0.3	1.1	5,139
14	494	Laparoscopic Cholecystectomy W/O C.D.E. W/O Cc	4,488	1.3	35.2	0.6	2.5	11,138
15	373	Vaginal Delivery W/O Complicating Diagnoses	4,340	1.3	36.4	0.7	3.2	14,013
16	500	Back & Neck Procedures Except Spinal Fusion W/O Cc	4,233	1.2	37.7	0.6	3.0	12,549
17	232	Arthroscopy	4,176	1.2	38.9	0.2	1.1	4,691
18	498	Spinal Fusion Except Cervical W/O Cc	4,050	1.2	40.0	1.0	4.7	19,065
19	479	Other Vascular Procedures W/O Cc	3,904	1.1	41.2	0.6	3.1	12,209
20	558	Percutaneous Cardiovascular Proc W Drug-Eluting Stent W/O Maj Cv Dx	3,627	1.0	42.2	0.6	3.4	12,296
21	227	Soft Tissue Procedures W/O Cc	3,566	1.0	43.2	0.2	1.3	4,676
22	538	Local Excis & Remov of Int Fix Dev Except Hip & Femur W/O Cc	3,543	1.0	44.3	0.3	1.9	6,737
23	337	Transurethral Prostatectomy W/O Cc	3,350	1.0	45.2	0.6	3.4	11,311
24	223	Major Shoulder/Elbow Proc, or Other Upper Extremity Proc W Cc	3,283	0.9	46.2	0.2	1.3	4,315
25	229	Hand or Wrist Proc, Except Major Joint Proc, W/O Cc	3,024	0.9	47.0	0.1	0.8	2,567
26	104	Cardiac Valve & Oth Major Cardiothoracic Proc W Card Cath	2,744	0.8	47.8	1.8	12.7	34,729
27	219	Lower Extrem & Humer Proc Except Hip, Foot, Femur Age >17 W/O Cc	2,626	0.8	48.6	0.5	3.9	10,277
28	087	Pulmonary Edema & Respiratory Failure	2,555	0.7	49.3	1.4	10.8	27,505
29	467	Other Factors Influencing Health Status	2,429	0.7	50.0	0.5	4.3	10,328
30	297	Nutritional & Misc Metabolic Disorders Age >17 W/O Cc	2,424	0.7	50.7	0.6	4.8	11,727

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(Continued) *Table S/25 – AIOP Private hospitals (accredited healthcare facilities): top 60 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admission for acute cases in the North of Italy. Year 2016*

Rank		DRG	Discharges			% In-hospital days	Average length of stay	In-hospital days
			Number	%	% cumul,			
31	008	Periph & Cranial Nerve & Other Nerv Syst Proc W/O Cc	2,381	0.7	51.4	0.2	1.7	4,022
32	089	Simple Pneumonia & Pleurisy Age >17 W Cc	2,275	0.7	52.1	1.4	11.7	26,686
33	428	Disorders Of Personality & Impulse Control	2,210	0.6	52.7	3.5	30.9	68,201
34	055	Miscellaneous Ear, Nose, Mouth & Throat Procedures	2,125	0.6	53.3	0.2	1.4	2,969
35	053	Sinus & Mastoid Procedures Age >17	2,094	0.6	53.9	0.2	1.8	3,708
36	545	Revision Of Hip Or Knee Replacement	2,084	0.6	54.5	0.9	8.4	17,437
37	119	Vein Ligation & Stripping	2,052	0.6	55.1	0.1	0.9	1,821
38	234	Other Musculoskelet Sys & Conn Tiss O.R. Proc W/O Cc	2,026	0.6	55.7	0.2	1.9	3,916
39	014	Intracranial Hemorrhage Or Cerebral Infarction	2,019	0.6	56.3	1.0	9.2	18,664
40	371	Cesarean Section W/O Cc	1,988	0.6	56.8	0.5	4.7	9,276
41	160	Hernia Procedures Except Inguinal & Femoral Age >17 W/O Cc	1,977	0.6	57.4	0.2	2.2	4,303
42	183	Esophagitis, Gastroent & Misc Digest Disorders Age >17 W/O Cc	1,935	0.6	58.0	0.6	6.1	11,731
43	088	Chronic Obstructive Pulmonary Disease	1,916	0.6	58.5	0.8	8.6	16,457
44	139	Cardiac Arrhythmia & Conduction Disorders W/O Cc	1,870	0.5	59.1	0.3	3.6	6,677
45	012	Degenerative Nervous System Disorders	1,743	0.5	59.6	0.8	8.9	15,548
46	552	Other Permanent Cardiac Pacemaker Implant W/O Major Cv Dx	1,734	0.5	60.1	0.4	4.6	7,945
47	461	O.R. Proc W Diagnoses of Other Contact W Health Services	1,705	0.5	60.6	0.3	3.2	5,406
48	042	Intraocular Procedures Except Retina, Iris & Lens	1,684	0.5	61.0	0.2	2.0	3,347
49	395	Red Blood Cell Disorders Age > 17	1,641	0.5	61.5	0.7	8.5	13,982
50	365	Other Female Reproductive System O.R. Procedures	1,612	0.5	62.0	0.1	0.6	1,007
51	335	Major Male Pelvic Procedures W/O Cc	1,590	0.5	62.4	0.6	6.9	10,958
52	105	Cardiac Valve & Oth Major Cardiothoracic Proc W/O Card Cath	1,586	0.5	62.9	1.1	13.6	21,589
53	149	Major Small & Large Bowel Procedures W/O Cc	1,584	0.5	63.4	0.6	8.0	12,669
54	491	Major Joint & Limb Reattachment Procedures of Upper Extremity	1,550	0.4	63.8	0.4	4.8	7,384
55	211	Hip & Femur Procedures Except Major Joint Age >17 W/O Cc	1,510	0.4	64.2	0.5	6.8	10,237
56	557	Percutaneous Cardiovascular Proc W Drug-Eluting Stent W Major Cv Dx	1,485	0.4	64.7	0.6	7.6	11,264
57	554	Other Vascular Procedures W Cc W/O Major Cv Dx	1,471	0.4	65.1	0.5	6.6	9,759
58	243	Medical Back Problems	1,469	0.4	65.5	0.5	6.4	9,377
59	576	Septicemia W/O Mv96 + Hours Age >17	1,413	0.4	65.9	1.1	15.6	21,991
60	120	Other Circulatory System O.R. Procedures	1,406	0.4	66.3	0.5	7.0	9,823
		Total (top 60 DRGs)	*230,124*	*66.3*			*4.9*	*1,130,129*
		Grand Total (North)	*346,967*				*5.6*	*1,955,761*

Source: *processing by Ermeneia – data from AIOP*

Table S/26 – AIOP Private hospitals (accredited healthcare facilities): top 60 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for acute cases in the Center of Italy. Year 2016

Rank	DRG		Discharges			% In-hospital days	Average length of stay	In-hospital days
			Number	%	% cumul,			
1	544	Major Joint Replacement or Reattachment of Lower Extremity	10,971	15.1	15.1	19.4	6.9	75,672
2	225	Foot Procedures	5,213	7.2	22.3	2.1	1.6	8,113
3	503	Knee Procedures W/O Pdx of Infection	4,054	5.6	27.9	1.3	1.3	5,266
4	223	Major Shoulder/Elbow Proc, or Other Upper Extremity Proc W Cc	3,037	4.2	32.0	1.2	1.6	4,783
5	127	Heart Failure & Shock	2,097	2.9	34.9	5.2	9.6	20,169
6	224	Shoulder, Elbow or Forearm Proc, Exc Major Joint Proc, W/O Cc	1,578	2.2	37.1	1.0	2.5	3,930
7	498	Spinal Fusion Except Cervical W/O Cc	1,476	2.0	39.1	1.4	3.6	5,355
8	494	Laparoscopic Cholecystectomy W/O C.D.E. W/O Cc	1,224	1.7	40.8	0.8	2.7	3,306
9	087	Pulmonary Edema & Respiratory Failure	1,008	1.4	42.2	2.3	8.7	8,800
10	288	O.R. Procedures For Obesity	978	1.3	43.5	1.0	3.9	3,838
11	089	Simple Pneumonia & Pleurisy Age >17 W Cc	954	1.3	44.9	2.5	10.4	9,899
12	219	Lower Extrem & Humer Proc Except Hip,Foot,Femur Age >17 W/O Cc	903	1.2	46.1	1.3	5.5	4,967
13	359	Uterine & Adnexa Proc For Non-Malignancy W/O Cc	862	1.2	47.3	0.7	3.2	2,784
14	337	Transurethral Prostatectomy W/O Cc	859	1.2	48.5	0.8	3.5	2,984
15	311	Transurethral Procedures W/O Cc	823	1.1	49.6	0.6	3.0	2,487
16	234	Other Musculoskelet Sys & Conn Tiss O.R. Proc W/O Cc	817	1.1	50.7	0.5	2.2	1,814
17	545	Revision Of Hip Or Knee Replacement	800	1.1	51.8	1.7	8.5	6,803
18	305	Kidney, Ureter & Major Bladder Procedures For Non-Neoplasm W/O Cc	708	1.0	52.8	0.6	3.2	2,299
19	491	Major Joint & Limb Reattachment Procedures of Upper Extremity	701	1.0	53.8	0.8	4.5	3,157
20	538	Local Excis & Remov of Int Fix Dev Except Hip & Femur W/O Cc	673	0.9	54.7	0.3	1.8	1,213
21	227	Soft Tissue Procedures W/O Cc	663	0.9	55.6	0.3	1.9	1,243
22	500	Back & Neck Procedures Except Spinal Fusion W/O Cc	640	0.9	56.5	0.4	2.4	1,530
23	524	Transient Ischemia	609	0.8	57.3	1.3	8.1	4,930
24	014	Intracranial Hemorrhage or Cerebral Infarction	582	0.8	58.1	1.4	9.2	5,354
25	082	Respiratory Neoplasms	530	0.7	58.9	1.3	9.3	4,940
26	211	Hip & Femur Procedures Except Major Joint Age >17 W/O Cc	514	0.7	59.6	1.0	7.6	3,905
27	316	Renal Failure	513	0.7	60.3	1.3	10.1	5,181
28	158	Anal & Stomal Procedures W/O Cc	509	0.7	61.0	0.3	2.2	1,130
29	149	Major Small & Large Bowel Procedures W/O Cc	505	0.7	61.7	0.7	5.2	2,624
30	055	Miscellaneous Ear, Nose, Mouth & Throat Procedures	473	0.7	62.3	0.2	1.6	755
31	088	Chronic Obstructive Pulmonary Disease	458	0.6	62.9	1.0	8.3	3,809

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(Continued) *Table S/26 – AIOP Private hospitals (accredited healthcare facilities): top 60 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for acute cases in the Center of Italy. Year 2016*

Rank		DRG	Discharges			% In-hospital days	Average length of stay	In-hospital days
			Number	%	% cumul,			
32	053	Sinus & Mastoid Procedures Age >17	452	0.6	63.6	0.3	2.6	1,187
33	335	Major Male Pelvic Procedures W/O Cc	449	0.6	64.2	0.7	6.0	2,694
34	296	Nutritional & Misc Metabolic Disorders Age >17 W Cc	431	0.6	64.8	1.0	8.8	3,785
35	467	Other Factors Influencing Health Status	422	0.6	65.4	0.3	2.4	999
36	320	Kidney & Urinary Tract Infections Age >17 W Cc	417	0.6	65.9	1.0	8.9	3,725
37	183	Esophagitis, Gastroent & Misc Digest Disorders Age >17 W/O Cc	415	0.6	66.5	0.6	5.9	2,437
38	162	Inguinal & Femoral Hernia Procedures Age >17 W/O Cc	411	0.6	67.1	0.2	1.4	593
39	297	Nutritional & Misc Metabolic Disorders Age >17 W/O Cc	404	0.6	67.6	0.6	5.5	2,237
40	229	Hand or Wrist Proc, Except Major Joint Proc, W/O Cc	402	0.6	68.2	0.1	1.2	480
41	304	Kidney, Ureter & Major Blad Proc For Non-neoplasm W CC	394	0.5	68.7	0.4	3.5	1,369
42	008	Periph & Cranial Nerve & Other Nerv Syst Proc W/O Cc	390	0.5	69.3	0.2	1.6	614
43	232	Arthroscopy	380	0.5	69.8	0.1	1.5	564
44	313	Urethral Procedures, Age >17 W/O CC	364	0.5	70.3	0.2	2.1	764
45	309	Minor Bladder Procedures W/O Cc	362	0.5	70.8	0.3	2.9	1,058
46	119	Vein Ligation & Stripping	359	0.5	71.3	0.1	0.8	293
47	532	Spinal Procedures W/O Cc	354	0.5	71.8	0.2	2.4	838
48	182	Esophagitis,gastroent & Misc Digest Disord Age>17 W CC	351	0.5	72.2	0.8	8.5	2,976
49	120	Other Circulatory System O.R. Procedures	350	0.5	72.7	0.4	4.2	1,476
50	160	Hernia Procedures Except Inguinal & Femoral Age >17 W/O Cc	334	0.5	73.2	0.2	2.7	911
51	395	Red Blood Cell Disorders Age >17	328	0.5	73.6	0.9	10.6	3,489
52	290	Thyroid Procedures	316	0.4	74.1	0.2	2.9	920
53	085	Pleural Effusion W CC	291	0.4	74.5	0.8	10.9	3,162
54	210	Hip & Femur Procedures Except Major Joint Age >17 W Cc	259	0.4	74.8	0.9	12.9	3,346
55	090	Simple Pneumonia & Pleurisy Age >17 W/O Cc	258	0.4	75.2	0.6	9.5	2,457
56	203	Malignancy of Hepatobiliary System or Pancreas	255	0.4	75.5	0.6	9.7	2,473
57	430	Psychoses	237	0.3	75.9	1.6	25.6	6,063
58	138	Cardiac Arrhythmia & Conduction Disorders W Cc	234	0.3	76.2	0.5	7.6	1,789
59	015	Nonspecific Cva & Precerebral Occlusion W/O Infarct	222	0.3	76.5	0.5	8.7	1,922
60	141	Syncope & Collapse W CC	216	0.3	76.8	0.4	7.8	1,674
		Total (top 60 DRGs)	*55,789*	*76.8*			*4.8*	*269,335*
		Grand total (Center)	*72,656*				*5.4*	*390,729*

Source: *processing by Ermeneia – data from AIOP*

Table S/27 – AIOP Private hospitals (accredited healthcare facilities): top 60 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for acute cases in the South of Italy. Year 2016

Rank	DRG		Discharges			% In-hospital days	Average length of stay	In-hospital days
			Number	%	% cumul,			
1	039	Lens Procedures With Or Without Vitrectomy	21,677	5.9	5.9	3.8	4.6	99,505
2	371	Cesarean Section W/O Cc	16,475	4.5	10.4	2.5	4.0	66,105
3	544	Major Joint Replacement or Reattachment of Lower Extremity	16,016	4.4	14.8	4.2	6.8	108,800
4	373	Vaginal Delivery W/O Complicating Diagnoses	9,998	2.7	17.5	1.3	3.4	34,414
5	359	Uterine & Adnexa Proc For Ca In Situ & Nonmalig W/O CC	9,204	2.5	20.0	1.2	3.4	31,700
6	127	Heart Failure & Shock	8,707	2.4	22.3	2.7	8.1	70,398
7	410	Chemotherapy W/O Acute Leukemia as Secondary Diagnosis	7,992	2.2	24.5	22.1	72.4	578,813
8	503	Knee Procedures W/O Pdx of Infection	7,540	2.1	26.6	0.8	2.9	22,108
9	494	Laparoscopic Cholecystectomy W/O C.D.E. W/O Cc	7,381	2.0	28.6	0.8	2.9	21,541
10	125	Circulatory Disorders Except Ami, W Card Cath W/O Complex Diag	7,070	1.9	30.5	0.6	2.4	16,716
11	162	Inguinal & Femoral Hernia Procedures Age >17 W/O Cc	6,094	1.7	32.2	0.8	3.4	20,433
12	430	Psychoses	6,072	1.7	33.8	6.9	29.7	180,320
13	183	Esophagitis, Gastroent & Misc Digest Disorders Age >17 W/O Cc	4,627	1.3	35.1	0.7	4.2	19,218
14	311	Transurethral Procedures W/O Cc	4,557	1.2	36.3	0.6	3.2	14,578
15	087	Pulmonary Edema & Respiratory Failure	3,914	1.1	37.4	1.2	7.9	30,909
16	012	Degenerative Nervous System Disorders	3,907	1.1	38.5	1.5	10.3	40,074
17	558	Percutaneous Cardiovascular Proc W Drug-Eluting Stent W/O Maj Cv Dx	3,803	1.0	39.5	0.5	3.4	12,768
18	225	Foot Procedures	3,654	1.0	40.5	0.3	2.0	7,422
19	467	Other Factors Influencing Health Status	3,493	1.0	41.4	1.6	11.7	40,774
20	500	Back & Neck Procedures Except Spinal Fusion W/O Cc	3,463	0.9	42.4	0.5	3.5	12,119
21	158	Anal & Stomal Procedures W/O Cc	3,260	0.9	43.3	0.4	3.2	10,402
22	290	Thyroid Procedures	3,217	0.9	44.1	0.4	2.9	9,241
23	337	Transurethral Prostatectomy W/O Cc	3,032	0.8	45.0	0.5	4.6	13,800
24	297	Nutritional & Misc Metabolic Disorders Age >17 W/O Cc	2,866	0.8	45.8	0.5	4.4	12,677
25	223	Major Shoulder/Elbow Proc, or Other Upper Extremity Proc W Cc	2,717	0.7	46.5	0.2	2.0	5,489
26	143	Chest Pain	2,619	0.7	47.2	0.2	2.2	5,659
27	316	Renal Failure	2,535	0.7	47.9	0.7	7.1	18,125
28	498	Spinal Fusion Except Cervical W/O Cc	2,528	0.7	48.6	0.5	4.9	12,377
29	006	Carpal Tunnel Release	2,417	0.7	49.2	0.2	1.6	3,950
30	017	Nonspecific Cerebrovascular Disorders W/O Cc	2,379	0.6	49.9	1.3	14.3	33,962
31	234	Other Musculoskelet Sys & Conn Tiss O.R. Proc W/O Cc	2,248	0.6	50.5	0.2	2.2	4,973

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(Continued) *Table S/27 – AIOP Private hospitals (accredited healthcare facilities): top 60 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for acute cases in the South of Italy. Year 2016*

Rank		DRG	Discharges			% In-hospital days	Average length of stay	In-hospital days
			Number	%	% cumul,			
32	524	Transient Ischemia	2,246	0.6	51.1	0.6	7.1	16,042
33	479	Other Vascular Procedures W/O Cc	2,118	0.6	51.7	0.3	3.4	7,129
34	288	O.R. Procedures For Obesity	2,061	0.6	52.3	0.4	4.6	9,478
35	227	Soft Tissue Procedures W/O Cc	2,024	0.6	52.8	0.2	2.1	4,219
36	270	Other Skin, Subcut Tiss & Breast Proc W/O Cc	1,967	0.5	53.3	0.2	2.1	4,103
37	119	Vein Ligation & Stripping	1,946	0.5	53.9	0.2	2.3	4,469
38	260	Subtotal Mastectomy For Malignancy W/O Cc	1,925	0.5	54.4	0.2	2.6	5,000
39	082	Respiratory Neoplasms	1,900	0.5	54.9	0.5	6.5	12,352
40	189	Other Digestive System Diagnoses Age >17 W/O Cc	1,871	0.5	55.4	0.4	5.4	10,026
41	379	Threatened Abortion	1,860	0.5	55.9	0.3	4.4	8,140
42	224	Shoulder, Elbow or Forearm Proc, Exc Major Joint Proc, W/O Cc	1,853	0.5	56.4	0.2	2.4	4,383
43	381	Abortion W D&C, Aspiration Curettage or Hysterotomy	1,840	0.5	56.9	0.1	1.1	1,995
44	160	Hernia Procedures Except Inguinal & Femoral Age >17 W/O Cc	1,837	0.5	57.4	0.2	3.2	5,924
45	339	Testes Procedures, Non-Malignancy Age >17	1,810	0.5	57.9	0.2	2.6	4,782
46	281	Trauma to the Skin, Subcut Tiss & Breast Age >17 W/O Cc	1,719	0.5	58.4	0.0	0.2	309
47	104	Cardiac Valve & Oth Major Cardiothoracic Proc W Card Cath	1,718	0.5	58.9	0.9	13.4	22,987
48	016	Nonspecific Cerebrovascular Disorders W Cc	1,700	0.5	59.3	0.5	8.2	14,014
49	229	Hand or Wrist Proc, Except Major Joint Proc, W/O Cc	1,654	0.5	59.8	0.1	1.7	2,821
50	139	Hand or Wrist Proc, Except Major Joint Proc, W/O Cc	1,644	0.4	60.2	0.2	3.2	5,223
51	055	Miscellaneous Ear, Nose, Mouth & Throat Procedures	1,641	0.4	60.7	0.1	2.4	3,857
52	323	Urinary Stones W Cc, &/Or Esw Lithotripsy	1,639	0.4	61.1	1.2	19.1	31,327
53	552	Other Permanent Cardiac Pacemaker Implant W/O Major Cv Dx	1,620	0.4	61.6	0.3	4.2	6,863
54	097	Bronchitis & Asthma Age >17 W/O Cc	1,590	0.4	62.0	0.3	5.7	9,023
55	538	Local Excis & Remov of Int Fix Dev Except Hip & Femur W/O Cc	1,578	0.4	62.4	0.1	2.3	3,658
56	088	Chronic Obstructive Pulmonary Disease	1,574	0.4	62.8	0.4	7.0	10,969
57	518	Perc Cardio Proc W/O Coronary Artery Stent or Ami	1,532	0.4	63.3	0.2	2.8	4,295
58	305	Kidney, Ureter & Major Bladder Procedures For Non-Neoplasm W/O Cc	1,523	0.4	63.7	0.2	3.6	5,545
59	149	Major Small & Large Bowel Procedures W/O Cc	1,489	0.4	64.1	0.5	8.1	12,122
60	557	Percutaneous Cardiovascular Proc W Drug-Eluting Stent W Major Cv Dx	1,444	0.4	64.5	0.4	6.5	9,395
		Total (top 60 DRGs)	*236,785*	*64.5*			*7.6*	*1,799,820*
		Grand total (South)	*367,240*				*7.1*	*2,614,725*

Source: *processing by Ermeneia – data from AIOP*

Table S/28 – Total number of public and private healthcare facilities: top 30 DRGs according to the number of discharges (DRG Version 24.0) – Day hospital admissions for acute cases. Year 2015

Rank		DRG	Discharges			% Accesses	Average number of accesses
			Number	%	% cumul,		
1	410	Chemotherapy W/O Acute Leukemia As Secondary Diagnosis	139,414	6.7	6.7	25.4	10.4
2	381	Abortion W D&C, Aspiration Curettage or Hysterotomy	97,032	4.7	11.4	2.2	1.3
3	359	Uterine & Adnexa Proc For Non-Malignancy W/O Cc	88,047	4.3	15.7	2.0	1.3
4	162	Inguinal & Femoral Hernia Procedures Age >17 W/O Cc	68,922	3.3	19.0	1.8	1.5
5	266	Skin Graft &/Or Debrid Except For Skin Ulcer Or Cellulitis W/O Cc	53,640	2.6	21.6	1.5	1.6
6	039	Lens Procedures With Or Without Vitrectomy	50,080	2.4	24.0	1.8	2.0
7	467	Other Factors Influencing Health Status	48,422	2.3	26.4	1.8	2.1
8	503	Knee Procedures W/O Pdx of Infection	42,913	2.1	28.4	1.1	1.4
9	364	D&C, Conization Except For Malignancy	42,188	2.0	30.5	1.1	1.4
10	229	Hand or Wrist Proc, Except Major Joint Proc, W/O Cc	32,711	1.6	32.0	0.8	1.3
11	538	Local Excis & Remov of Int Fix Dev Except Hip & Femur W/O Cc	31,910	1.5	33.6	0.8	1.4
12	055	Miscellaneous Ear, Nose, Mouth & Throat Procedures	31,375	1.5	35.1	0.8	1.5
13	119	Vein Ligation & Stripping	31,259	1.5	36.6	0.8	1.4
14	270	Other Skin, Subcut Tiss & Breast Proc W/O Cc	30,626	1.5	38.1	0.8	1.5
15	225	Foot Procedures	30,114	1.5	39.6	0.8	1.4
16	042	Intraocular Procedures Except Retina, Iris & Lens	28,206	1.4	40.9	0.9	1.7
17	169	Mouth Procedures W/O Cc	27,489	1.3	42.2	0.7	1.5
18	158	Anal & Stomal Procedures W/O Cc	24,473	1.2	43.4	0.7	1.6
19	301	Endocrine Disorders W/O Cc	21,792	1.1	44.5	0.7	2.0
20	395	Red Blood Cell Disorders Age >17	21,379	1.0	45.5	3.1	8.2
21	227	Soft Tissue Procedures W/O Cc	18,717	0.9	46.4	0.5	1.4
22	139	Cardiac Arrhythmia & Conduction Disorders W/O Cc	18,219	0.9	47.3	0.5	1.5
23	466	Aftercare W/O History Of Malignancy As Secondary Diagnosis	17,854	0.9	48.2	0.8	2.7
24	339	Testes Procedures, Non-Malignancy Age >17	17,638	0.9	49.0	0.5	1.5
25	267	Perianal & Pilonidal Procedures	16,983	0.8	49.8	0.5	1.8
26	404	Lymphoma & Non-Acute Leukemia W/O Cc	16,983	0.8	50.7	1.6	5.5
27	036	Retinal Procedures	16,704	0.8	51.5	0.6	2.0
28	040	Extraocular Procedures Except Orbit Age >17	16,013	0.8	52.2	0.4	1.6
29	262	Breast Biopsy & Local Excision For Non-Malignancy	15,548	0.8	53.0	0.4	1.5
30	189	Other Digestive System Diagnoses Age >17 W/O Cc	15,097	0.7	53.7	0.4	1.6
		Total (top 30 DRGs)	*1,111,748*	*53.7*		*55.7*	
		Grand total	*2,069,823*	*100.0*		*100.0*	*2.8*

Source: *data from the Ministry of Health – SDO 2015*

Table S/29 – Total number of public and private healthcare facilities: top 30 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for rehabilitation treatment. Year 2015

Rank		DRG	Discharges			% In-hospital days	Average length of stay
			Number	%	% cumul,		
1	256	Other Musculoskeletal System & Connective Tissue Diagnoses	74,151	23.3	23.3	16.4	18.4
2	012	Degenerative Nervous System Disorders	36,174	11.4	34.7	17.7	40.6
3	249	Aftercare, Musculoskeletal System & Connective Tissue	25,495	8.0	42.7	8.0	26.1
4	145	Other Circulatory System Diagnoses W/O Cc	16,551	5.2	47.9	3.3	16.8
5	144	Other Circulatory System Diagnoses W Cc	13,955	4.4	52.3	3.2	19.1
6	462	Rehabilitation	13,120	4.1	56.4	3.6	22.6
7	009	Spinal Disorders & Injuries	10,068	3.2	59.5	6.1	50.7
8	245	Bone Diseases & Specific Arthropathies W/O Cc	9,848	3.1	62.6	2.0	17.1
9	087	Pulmonary Edema & Respiratory Failure	9,028	2.8	65.5	2.5	23.4
10	247	Signs & Symptoms Of Musculoskeletal System & Conn Tissue	8,139	2.6	68.0	2.4	24.5
11	127	Heart Failure & Shock	7,747	2.4	70.5	1.9	19.9
12	430	Psychoses	7,679	2.4	72.9	2.6	28.5
13	236	Fractures Of Hip & Pelvis	7,025	2.2	75.1	2.7	31.7
14	035	Other Disorders Of Nervous System W/O Cc	6,841	2.1	77.2	2.9	34.9
15	088	Chronic Obstructive Pulmonary Disease	5,531	1.7	79.0	1.5	22.6
16	034	Other Disorders Of Nervous System W Cc	4,476	1.4	80.4	2.1	38.3
17	014	Intracranial Hemorrhage or Cerebral Infarction	4,298	1.4	81.7	2.4	45.8
18	248	Tendonitis, Myositis & Bursitis	4,238	1.3	83.1	1.4	28.0
19	243	Medical Back Problems	3,148	1.0	84.0	0.9	24.3
20	467	Other Factors Influencing Health Status	2,647	0.8	84.9	0.7	22.5
21	544	Major Joint Replacement or Reattachment of Lower Extremity	2,490	0.8	85.7	0.6	19.0
22	428	Disorders Of Personality & Impulse Control	2,305	0.7	86.4	1.0	34.7
23	013	Multiple Sclerosis & Cerebellar Ataxia	2,271	0.7	87.1	0.9	34.0
24	023	Nontraumatic Stupor & Coma	1,871	0.6	87.7	2.0	91.2
25	133	Atherosclerosis W/O Cc	1,868	0.6	88.3	0.4	16.8
26	135	Cardiac Congenital & Valvular Disorders Age >17 W Cc	1,799	0.6	88.8	0.4	19.1
27	522	Alc/Drug Abuse Or Depend W Rehabilitation Therapy W/O Cc	1,728	0.5	89.4	0.5	26.3
28	429	Organic Disturbances & Mental Retardation	1,420	0.4	89.8	0.4	24.5
29	019	Cranial & Peripheral Nerve Disorders W/O Cc	1,368	0.4	90.3	0.5	30.9
30	073	Other Ear, Nose, Mouth & Throat Diagnoses Age >17	1,284	0.4	90.7	0.2	12.9
		Total (top 30 DRGs)	*288,563*	*90.7*		*91.2*	
		Grand total	*318,307*	*100.0*		*100.0*	*26.2*

Source: *data from the Ministry of Health – SDO 2015*

Table S/30 – AIOP Private hospitals (accredited healthcare facilities): top 30 DRGs according to the number of discharges (DRG Version 24.0) – Inpatient admissions for rehabilitation treatment. Year 2016

Rank		DRG	Discharges			% In-hospital days	Average length of stay	In-hospital days
			Number	%	% cumul,			
1	256	Other Musculoskeletal System & Connective Tissue Diagnoses	30,139	28.7	28.7	20.3	16.8	507,161
2	012	Degenerative Nervous System Disorders	8,606	8.2	36.9	13.8	40.0	344,008
3	249	Aftercare, Musculoskeletal System & Connective Tissue	8,291	7.9	44.8	8.4	25.1	208,285
4	145	Other Circulatory System Diagnoses W/O Cc	6,029	5.7	50.5	4.1	17.1	102,858
5	245	Other Circulatory System Diagnoses W/O Cc	4,906	4.7	55.2	3.3	16.7	81,805
6	430	Psychoses	4,458	4.2	59.4	5.1	28.7	127,755
7	462	Rehabilitation	3,911	3.7	63.2	3.5	22.1	86,585
8	144	Other Circulatory System Diagnoses W Cc	3,277	3.1	66.3	2.5	19.3	63,227
9	247	Signs & Symptoms Of Musculoskeletal System & Conn Tissue	2,744	2.6	68.9	2.6	23.4	64,152
10	544	Major Joint Replacement or Reattachment of Lower Extremity	2,695	2.6	71.5	1.6	14.7	39,705
11	236	Fractures Of Hip & Pelvis	2,441	2.3	73.8	3.2	32.5	79,362
12	088	Chronic Obstructive Pulmonary Disease	1,641	1.6	75.4	1.4	21.9	35,896
13	035	Other Disorders Of Nervous System W/O Cc	1,584	1.5	76.9	2.3	35.5	56,217
14	087	Pulmonary Edema & Respiratory Failure	1,492	1.4	78.3	1.4	23.8	35,498
15	127	Heart Failure & Shock	1,361	1.3	79.6	1.1	19.6	26,693
16	428	Disorders Of Personality & Impulse Control	1,324	1.3	80.8	1.8	34.6	45,798
17	009	Spinal Disorders & Injuries	1,196	1.1	82.0	2.2	45.2	54,107
18	248	Tendonitis, Myositis & Bursitis	1,087	1.0	83.0	1.1	25.6	27,827
19	522	Alc/Drug Abuse Or Depend W Rehabilitation Therapy W/O Cc	975	0.9	83.9	1.0	26.3	25,599
20	014	Intracranial Hemorrhage or Cerebral Infarction	936	0.9	84.8	1.8	49.2	46,088
21	468	Extensive O.R. Procedure Unrelated to Principal Diagnosis	829	0.8	85.6	0.9	28.2	23,380
22	244	Bone Diseases & Specific Arthropathies W Cc	770	0.7	86.4	0.6	18.7	14,424
23	467	Other Factors Influencing Health Status	753	0.7	87.1	0.6	18.5	13,944
24	034	Other Disorders Of Nervous System W Cc	725	0.7	87.8	1.1	39.4	28,581
25	243	Medical Back Problems	713	0.7	88.4	0.7	25.9	18,439
26	133	Atherosclerosis W/O Cc	676	0.6	89.1	0.5	17.6	11,906
27	019	Cranial & Peripheral Nerve Disorders W/O Cc	599	0.6	89.7	0.7	30.2	18,087
28	013	Multiple Sclerosis & Cerebellar Ataxia	517	0.5	90.1	0.6	30.5	15,748
29	523	Alc/Drug Abuse Or Depend W/O Rehabilitation Therapy W/O Cc	513	0.5	90.6	0.6	29.3	15,039
30	297	Nutritional & Misc Metabolic Disorders Age >17 W/O Cc	451	0.4	91.1	0.4	23.0	10,351
		Total (top 30 DRGs)	*95,639*	*91.1*			*23.3*	*2,228,525*
		Grand total	*105,026*				*23.7*	*2,492,617*

Source: *processing by Ermeneia – data from AIOP*

Table S/31 – Total number of public and private facilities: description of activities according to the Major Diagnostic Categories (MDC) – Inpatient admissions for acute cases. Year 2015

MDC	*Number of cases*	*%*	*In-hospital days*	*Average length of stay*
01 – Diseases and Disorders of the Nervous System	446,510	7.0	3,599,242	8.1
02 – Diseases and Disorders of the Eye	75,703	1.2	222,863	2.9
03 – Diseases and Disorders of The Ear, Nose, Mouth and Throat	214,538	3.4	691,615	3.2
04 – Diseases and Disorders of the Respiratory System	585,119	9.1	5,597,493	9.6
05 – Diseases and Disorders of the Circulatory System	929,239	14.5	6,598,171	7.1
06 – Diseases and Disorders of the Digestive System	588,600	9.2	4,107,699	7.0
07 – Diseases and Disorders of the Hepatobiliary System and Pancreas	301,082	4.7	2,385,682	7.9
08 – Diseases and Disorders of the Musculoskeletal System and Connective Tissue	808,557	12.6	4,959,688	6.1
09 – Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	182,981	2.9	778,544	4.3
10 – Endocrine, Nutritional and Metabolic Diseases and Disorders	170,291	2.7	928,020	5.4
11 – Diseases and Disorders of the Kidney and Urinary Tract	360,499	5.6	2,422,013	6.7
12 – Diseases and Disorders of the Male Reproductive System	109,570	1.7	520,496	4.8
13 – Diseases and Disorders of the Female Reproductive System	188,074	2.9	767,731	4.1
14 – Pregnancy, Childbirth and the Puerperium	606,771	9.5	2,312,468	3.8
15 – Newborns and other Neonates with Conditions Originating in Perinatal Period	117,737	1.8	972,441	8.3
16 – Diseases and Disorders of the Blood, Blood Forming Organs, Immunological disorders	72,275	1.1	577,248	8.0
17 – Myeloproliferative Diseases & Disorders, Poorly Differentiated Neoplasms	153,790	2.4	1,157,417	7.5
18 – Infectious and Parasitic Diseases, Systemic or Unspecified Sites	128,722	2.0	1,388,613	10.8
19 – Mental Diseases and Disorders	142,668	2.2	1,656,225	11.6
20 – Alcohol/Drug Use and Alcohol/Drug Induced Organic Mental Disorders	13,167	0.2	95,192	7.2
21 – Injuries, Poisonings and Toxic Effects of Drugs	52,047	0.8	299,108	5.7
22 – Burns	4,135	0.1	55,066	13.3
23 – Factors Influencing Health Status and Other Contacts with Health Services	90,422	1.4	404,280	4.5
24 – Multiple Significant Trauma	8,749	0.1	122,983	14.1
25 – Human Immunodeficiency Virus Infections	6,468	0.1	106,095	16.4
Other DRGs	12,718	0.2	122,092	9.6
Pre MDC	27,602	0.4	980,708	35.5
Grand total	*6,398,034*	*100.0*	*43,829,193*	*6.9*

Source: *data from the Ministry of Health – SDO 2015*

Table S/32 – Total number of public and private facilities: description of activities classified according to the Major Diagnostic Categories (MDC) – Day hospital admissions for acute cases. Year 2015

MDC	*Number of cases*	*%*	*Accesses*	*Average number of accesses*
01 – Diseases and Disorders of the Nervous System	75,173	3.6	176,279	2.3
02 – Diseases and Disorders of the Eye	133,923	6.5	254,780	1.9
03 – Diseases and Disorders of The Ear, Nose, Mouth and Throat	141,094	6.8	249,483	1.8
04 – Diseases and Disorders of the Respiratory System	34,930	1.7	107,075	3.1
05 – Diseases and Disorders of the Circulatory System	119,705	5.8	240,918	2.0
06 – Diseases and Disorders of the Digestive System	170,449	8.2	298,387	1.8
07 – Diseases and Disorders of the Hepatobiliary System and Pancreas	33,756	1.6	122,904	3.6
08 – Diseases and Disorders of the Musculoskeletal System and Connective Tissue	256,895	12.4	507,165	2.0
09 – Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	166,356	8.0	312,927	1.9
10 – Endocrine, Nutritional and Metabolic Diseases and Disorders	66,727	3.2	147,113	2.2
11 – Diseases and Disorders of the Kidney and Urinary Tract	85,574	4.1	206,098	2.4
12 – Diseases and Disorders of the Male Reproductive System	78,232	3.8	120,663	1.5
13 – Diseases and Disorders of the Female Reproductive System	178,926	8.6	238,123	1.3
14 – Pregnancy, Childbirth and the Puerperium	116,143	5.6	165,726	1.4
15 – Newborns and other Neonates with Conditions Originating in Perinatal Period	2,116	0.1	5,311	2.5
16 – Diseases and Disorders of the Blood, Blood Forming Organs, Immunological disorders	44,437	2.1	276,236	6.2
17 – Myeloproliferative Diseases & Disorders, Poorly Differentiated Neoplasms	202,999	9.8	1,779,045	8.8
18 – Infectious and Parasitic Diseases, Systemic or Unspecified Sites	7,106	0.3	24,362	3.4
19 – Mental Diseases and Disorders	40,361	1.9	197,036	4.9
20 – Alcohol/Drug Use and Alcohol/Drug Induced Organic Mental Disorders	1,114	0.1	11,402	10.2
21 – Injuries, Poisonings and Toxic Effects of Drugs	10,160	0.5	27,105	2.7
22 – Burns	369	0.0	1,759	4.8
23 – Factors Influencing Health Status and Other Contacts with Health Services	90,985	4.4	196,134	2.2
24 – Multiple Significant Trauma	1	0.0	41	41.0
25 – Human Immunodeficiency Virus Infections	9,459	0.5	40,108	4.2
Other DRGs	2,777	0.1	5,846	2.1
Pre MDC	56	0.0	201	3.6
Grand total	*2,069,823*	*100.0*	*5,712,227*	*2.8*

Source: *data from the Ministry of Health – SDO 2015*

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Table S/33 – Total number of public and private facilities: description of activities classified according to the Major Diagnostic Categories (MDC) – Inpatient admissions for rehabilitation. Year 2015

MDC	*Number of cases*	*%*	*In-hospital days*	*Average length of stay*
01 – Diseases and Disorders of the Nervous System	74,172	23.3	3,101,648	41.8
02 – Diseases and Disorders of the Eye	82	0.0	721	8.8
03 – Diseases and Disorders of The Ear, Nose, Mouth and Throat	1,337	0.4	17,246	12.9
04 – Diseases and Disorders of the Respiratory System	18,149	5.7	411,932	22.7
05 – Diseases and Disorders of the Circulatory System	48,554	15.3	890,846	18.3
06 – Diseases and Disorders of the Digestive System	391	0.1	6,382	16.3
07 – Diseases and Disorders of the Hepatobiliary System and Pancreas	231	0.1	2,632	11.4
08 – Diseases and Disorders of the Musculoskeletal System and Connective Tissue	139,441	43.8	2,977,899	21.4
09 – Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	228	0.1	4,857	21.3
10 – Endocrine, Nutritional and Metabolic Diseases and Disorders	1,738	0.5	41,502	23.9
11 – Diseases and Disorders of the Kidney and Urinary Tract	533	0.2	6,474	12.1
12 – Diseases and Disorders of the Male Reproductive System	33	0.0	234	7.1
13 – Diseases and Disorders of the Female Reproductive System	20	0.0	299	15.0
14 – Pregnancy, Childbirth and the Puerperium	0	0.0	0	0.0
15 – Newborns and other Neonates with Conditions Originating in Perinatal Period	7	0.0	294	42.0
16 – Diseases and Disorders of the Blood, Blood Forming Organs, Immunological disorders	71	0.0	1,506	21.2
17 – Myeloproliferative Diseases & Disorders, Poorly Differentiated Neoplasms	90	0.0	2,220	24.7
18 – Infectious and Parasitic Diseases, Systemic or Unspecified Sites	140	0.0	3,533	25.2
19 – Mental Diseases and Disorders	13,180	4.1	380,238	28.8
20 – Alcohol/Drug Use and Alcohol/Drug Induced Organic Mental Disorders	2,791	0.9	71,044	25.5
21 – Injuries, Poisonings and Toxic Effects of Drugs	326	0.1	7,590	23.3
22 – Burns	18	0.0	679	37.7
23 – Factors Influencing Health Status and Other Contacts with Health Services	16,298	5.1	366,583	22.5
24 – Multiple Significant Trauma	164	0.1	7,257	44.3
25 – Human Immunodeficiency Virus Infections	9	0.0	233	25.9
Other DRGs	129	0.0	6,321	49.0
Pre MDC	175	0.1	15,848	90.6
Grand total	*318,307*	*100.0*	*8,326,018*	*26.2*

Source: *data from the Ministry of Health – SDO 2015*

 ISBN 9788891774620

Table S/34 – Total number of public and private facilities: description of activities classified according to the Major Diagnostic Categories (MDC) – Day hospital admissions for rehabilitation. Year 2015

MDC	*Number of cases*	*%*	*Accesses*	*Average number of accesses*
01 – Diseases and Disorders of the Nervous System	12,661	37.1	183,695	14.5
02 – Diseases and Disorders of the Eye	33	0.1	179	5.4
03 – Diseases and Disorders of The Ear, Nose, Mouth and Throat	19	0.1	98	5.2
04 – Diseases and Disorders of the Respiratory System	1,105	3.2	11,613	10.5
05 – Diseases and Disorders of the Circulatory System	4,183	12.3	53,085	12.7
06 – Diseases and Disorders of the Digestive System	103	0.3	554	5.4
07 – Diseases and Disorders of the Hepatobiliary System and Pancreas	2	0.0	2	1.0
08 – Diseases and Disorders of the Musculoskeletal System and Connective Tissue	6,621	19.4	116,013	17.5
09 – Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	228	0.7	666	2.9
10 – Endocrine, Nutritional and Metabolic Diseases and Disorders	87	0.3	792	9.1
11 – Diseases and Disorders of the Kidney and Urinary Tract	183	0.5	1,242	6.8
12 – Diseases and Disorders of the Male Reproductive System	82	0.2	89	1.1
13 – Diseases and Disorders of the Female Reproductive System	21	0.1	88	4.2
14 – Pregnancy, Childbirth and the Puerperium	0	0.0	0	0.0
15 – Newborns and other Neonates with Conditions Originating in Perinatal Period	13	0.0	73	5.6
16 – Diseases and Disorders of the Blood, Blood Forming Organs, Immunological disorders	11	0.0	20	1.8
17 – Myeloproliferative Diseases & Disorders, Poorly Differentiated Neoplasms	87	0.3	972	11.2
18 – Infectious and Parasitic Diseases, Systemic or Unspecified Sites	2	0.0	29	14.5
19 – Mental Diseases and Disorders	2,082	6.1	21,879	10.5
20 – Alcohol/Drug Use and Alcohol/Drug Induced Organic Mental Disorders	3	0.0	33	11.0
21 – Injuries, Poisonings and Toxic Effects of Drugs	43	0.1	728	16.9
22 – Burns	1	0.0	29	29.0
23 – Factors Influencing Health Status and Other Contacts with Health Services	6,525	19.1	95,060	14.6
24 – Multiple Significant Trauma	4	0.0	194	48.5
25 – Human Immunodeficiency Virus Infections	0	0.0	0	0.0
Other DRGs	6	0.0	60	10.0
Pre MDC	1	0.0	13	13.0
Grand total	*34,106*	*100.0*	*487,206*	*14.3*

Source: *data from the Ministry of Health – SDO 2015*

 ISBN 9788891774620

Table S/35 – Total number of public and private facilities: description of activities classified according to the Major Diagnostic Categories (MDC) – Long-stay care admissions. Year 2015

MDC	*Number of cases*	*%*	*In-hospital days*	*Average length of stay*
01 – Diseases and Disorders of the Nervous System	18,933	17.1	562,587	29.7
02 – Diseases and Disorders of the Eye	38	0.0	854	22.5
03 – Diseases and Disorders of The Ear, Nose, Mouth and Throat	362	0.3	9,492	26.2
04 – Diseases and Disorders of the Respiratory System	14,909	13.5	357,179	24.0
05 – Diseases and Disorders of the Circulatory System	12,925	11.7	324,679	25.1
06 – Diseases and Disorders of the Digestive System	4,104	3.7	104,186	25.4
07 – Diseases and Disorders of the Hepatobiliary System and Pancreas	2,914	2.6	70,820	24.3
08 – Diseases and Disorders of the Musculoskeletal System and Connective Tissue	25,136	22.7	704,280	28.0
09 – Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	1,581	1.4	44,143	27.9
10 – Endocrine, Nutritional and Metabolic Diseases and Disorders	2,409	2.2	59,805	24.8
11 – Diseases and Disorders of the Kidney and Urinary Tract	3,707	3.3	90,390	24.4
12 – Diseases and Disorders of the Male Reproductive System	295	0.3	7,000	23.7
13 – Diseases and Disorders of the Female Reproductive System	242	0.2	6,913	28.6
14 – Pregnancy, Childbirth and the Puerperium	7	0.0	187	26.7
15 – Newborns and other Neonates with Conditions Originating in Perinatal Period	13	0.0	293	22.5
16 – Diseases and Disorders of the Blood, Blood Forming Organs, Immunological disorders	1,090	1.0	22,854	21.0
17 – Myeloproliferative Diseases & Disorders, Poorly Differentiated Neoplasms	1,188	1.1	28,653	24.1
18 – Infectious and Parasitic Diseases, Systemic or Unspecified Sites	3,054	2.8	90,175	29.5
19 – Mental Diseases and Disorders	9,286	8.4	308,573	33.2
20 – Alcohol/Drug Use and Alcohol/Drug Induced Organic Mental Disorders	448	0.4	11,003	24.6
21 – Injuries, Poisonings and Toxic Effects of Drugs	760	0.7	21,606	28.4
22 – Burns	26	0.0	1,119	43.0
23 – Factors Influencing Health Status and Other Contacts with Health Services	6,772	6.1	160,010	23.6
24 – Multiple Significant Trauma	230	0.2	8,358	36.3
25 – Human Immunodeficiency Virus Infections	20	0.0	789	39.5
Other DRGs	98	0.1	3,588	36.6
Pre MDC	162	0.1	12,493	77.1
Grand total	*110,709*	*100.0*	*3,012,029*	*27.2*

Source: *data from the Ministry of Health – SDO 2015*

Table S/36 – Activities of private hospitals (accredited healthcare facilities) classified according to specialty. Year 2013 (National Data)

Specialty	Total					AIOP-associated Private hospitals (accredited healthcare facilities)				
	Patient beds	Inpatients	In-hospital days	Average length of stay	Occupancy rate %	Patient beds	Inpatients	In-hospital days	Average length of stay	Occupancy rate %
Angiology	34	619	6,052	9.8	48.8	16	231	2,560	11.1	43.8
Casualty department	12	1,056	5,084	4.8	116.1					
Heart surgery	542	23,262	166,160	7.1	84.0	439	17,591	131,820	7.5	82.3
Cardiology	1,355	83,976	345,103	4.1	69.8	1,094	64,151	277,604	4.3	69.5
General surgery	4,501	158,828	618,865	3.9	37.7	3,712	131,469	506,810	3.9	37.4
Maxillofacial surgery	59	2,527	3,821	1.5	18.0	52	2,483	3,710	1.5	19.5
Pediatric surgery	23	335	1,152	3.4	13.7	13	131	618	4.7	13.0
Plastic surgery	54	1,664	4,882	2.9	24.8	27	970	3,531	3.6	35.8
Thoracic surgery	56	1,617	10,334	6.4	50.6	53	1,520	9,487	6.2	49.0
Vascular surgery	320	12,539	55,407	4.4	47.4	254	9,927	41,491	4.2	44.8
Palliative care / Hospice	13	210	3,124	14.9	65.8	13	210	3,124	14.9	65.8
Dermatology	8	5	21	4.2	0.7	8	5	21	4.2	0.7
Gastroenterology	31	816	6,410	7.9	56.7	28	675	5,548	8.2	54.3
Geriatrics	544	16,705	142,373	8.5	71.7	467	12,361	116,253	9.4	68.2
Long-stay care pts	4,641	45,689	1,277,946	28.0	75.4	3,043	32,021	817,079	25.5	73.6
Endocrine, nutritional and metabolic diseases	37	635	5,820	9.2	43.1	37	635	5,820	9.2	43.1
General medicine	4,434	135,423	1,054,990	7.8	65.2	3,659	114,733	888,180	7.7	66.5
Nephrology	105	3,081	18,443	6.0	48.1	66	2,251	13,534	6.0	56.2
Neonatology	66	2,783	13,592	4.9	56.4	17	519	2,067	4.0	33.3
Neurosurgery	186	9,169	42,506	4.6	62.6	147	7,634	33,147	4.3	61.8
Neurology	894	17,397	218,648	12.6	67.0	738	12,577	187,082	14.9	69.5
Neurological rehabilitation	434	3,028	150,211	49.6	94.8	264	1,720	90,900	52.8	94.3
Day nursery	75	3,147	9,705	3.1	35.5	75	3,147	9,705	3.1	35.5
Ophthalmology	388	9,201	22,293	2.4	15.7	299	5,628	15,979	2.8	14.6
Oncology	454	16,679	107,291	6.4	64.7	390	14,974	95,769	6.4	67.3
Orthopedics and Traumatology	4,137	207,022	807,802	3.9	53.5	3,437	175,381	683,588	3.9	54.5
Obstetrics and gynaecology	1,905	101,546	362,798	3.6	52.2	1,376	74,577	259,824	3.5	51.7
Otorhinolaryngology	582	19,367	45,041	2.3	21.2	485	15,008	36,620	2.4	20.7

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(Continued) *Table S/36 – Activities of private hospitals (accredited healthcare facilities) classified according to specialty. Year 2013 (National data)*

Specialty	*Total*					*AIOP-associated Private hospitals (accredited healthcare facilities)*				
	Patient beds	*Inpatients*	*In-hospital days*	*Average length of stay*	*Occupancy rate %*	*Patient beds*	*Inpatients*	*In-hospital days*	*Average length of stay*	*Occupancy rate %*
Pediatrics	72	3,850	21,945	5.7	83.5	14	846	4,132	4.9	80.9
Pneumology	159	5,097	41,913	8.2	72.2	119	3,815	30,382	8.0	69.9
Psychiatry	1,894	20,600	530,486	25.8	76.7	1,689	18,652	487,565	26.1	79.1
Radiation Therapy	10	114	1,142	10.0	31.3	10	114	1,142	10.0	31.3
Functional recovery and rehabilitation	11,296	151,245	3,612,651	23.9	87.6	7,006	96,889	2,280,481	23.5	89.2
Rheumatology	45	1,845	14,230	7.7	86.6	15	919	7,541	8.2	137.7
Intensive care	302	11,226	58,159	5.2	52.8	201	6,701	39,603	5.9	54.0
Neonatal intensive care	34	808	10,787	13.4	86.9	8	237	4,225	17.8	144.7
Coronary care unit	144	8,940	34,311	3.8	65.3	88	4,727	22,435	4.7	69.8
Spinal care unit	25	152	8,932	58.8	97.9					
Urology	1,079	49,977	197,230	3.9	50.1	863	38,976	155,526	4.0	49.4
Totals	*40,950*	*1,109,536*	*10,037,660*	*9.0*	*67.2*	*30,222*	*856,917*	*7,274,903*	*8.5*	*65.9*

Source: *processing by Ermeneia – data from the Ministry of Health*

Table S/58 – Activities of private hospitals (accredited healthcare facilities) classified according to specialty. 2013 (North)

Specialty	*Total*					*AIOP-associated Private hospitals (accredited healthcare facilities)*				
	Patient beds	*Inpatients*	*In-hospital days*	*Average length of stay*	*Occupancy rate %*	*Patient beds*	*Inpatients*	*In-hospital days*	*Average length of stay*	*Occupancy rate %*
Heart surgery	240	8,496	70,138	8.3	80.1	192	6,825	55,102	8.1	78.6
Cardiology	518	28,592	119,813	4.2	63.4	439	23,635	101,603	4.3	63.4
General surgery	1,466	56,958	197,605	3.5	36.9	1,163	44,003	153,539	3.5	36.2
Maxillofacial surgery	31	774	1,549	2.0	13.7	31	774	1,549	2.0	13.7
Plastic surgery	24	1,080	2,777	2.6	31.7	10	538	1,969	3.7	53.9
Thoracic surgery	43	1,126	6,886	6.1	43.9	43	1,126	6,886	6.1	43.9
Vascular surgery	171	7,387	33,130	4.5	53.1	128	5,796	24,788	4.3	53.1
Palliative care / Hospice	13	210	3,124	14.9	65.8	13	210	3,124	14.9	65.8
Dermatology	8	5	21	4.2	0.7	8	5	21	4.2	0.7
Gastroenterology	2	84	474	5.6	64.9	2	84	474	5.6	64.9
Geriatrics	199	7,697	52,862	6.9	72.8	144	4,007	34,874	8.7	66.4
Long-stay care	2,584	30,000	774,658	25.8	82.1	1,714	22,154	527,365	23.8	84.3
General medicine	1,999	52,481	453,014	8.6	62.1	1,560	41,469	353,870	8.5	62.1
Nephrology	10	362	2,612	7.2	71.6					
Neonatology	28	1,586	7,911	5.0	77.4					
Neurosurgery	96	5,325	23,183	4.4	66.2	76	4,167	16,734	4.0	60.3
Neurology	187	6,542	42,587	6.5	62.4	125	4,091	28,882	7.1	63.3
Neurological rehabilitation	234	1,855	78,461	42.3	91.9	119	763	39,235	51.4	90.3
Ophthalmology	138	2,566	5,043	2.0	10.0	94	1,835	3,737	2.0	10.9
Oncology	82	2,124	15,191	7.2	50.8	30	1,008	7,336	7.3	67.0
Orthopedics and Traumatology	1,686	101,840	363,208	3.6	59.0	1,347	86,973	308,701	3.5	62.8
Obstetrics and gynaecology	461	22,323	72,670	3.3	43.2	295	13,579	38,334	2.8	35.6
Otorhinolaryngology	239	10,997	24,039	2.2	27.6	200	8,531	19,589	2.3	26.8
Pediatrics	72	3,850	21,945	5.7	83.5	14	846	4,132	4.9	80.9
Pneumology	27	355	3,705	10.4	37.6	27	355	3,705	10.4	37.6
Psychiatry	917	10,554	251,305	23.8	75.1	845	9,353	236,691	25.3	76.7
Functional recovery and rehabilitation	6,076	87,532	1,995,836	22.8	90.0	3,712	53,677	1,220,611	22.7	90.1
Intensive care	139	5,289	27,537	5.2	54.3	108	3,414	20,649	6.0	52.4
Neonatal intensive care	17	549	6,316	11.5	101.8					
Coronary care unit	32	1,774	5,748	3.2	49.2	23	823	3,324	4.0	39.6
Urology	463	22,157	86,720	3.9	51.3	324	15,299	59,910	3.9	50.7
Totals	*18,202*	*472,821*	*4,750,068*	*10.0*	*71.5*	*12,786*	*348,233*	*3,276,734*	*9.4*	*70.2*

Source: *processing by Ermeneia – data from the Ministry of Health*

Table S/59 – Activities of private hospitals (accredited healthcare facilities) classified according to specialty. 2013 (Center)

Specialty	Total					AIOP-associated Private hospitals (accredited healthcare facilities)				
	Patient beds	Inpatients	In-hospital days	Average length of stay	Occupancy rate %	Patient beds	Inpatients	In-hospital days	Average length of stay	Occupancy rate %
Angiology	26	472	5,288	11.2	55.7	8	84	1,796	21.4	61.5
Casualty department	12	1,056	5,084	4.8	116.1					
Heart surgery	54	1,911	12,352	6.5	62.7	32	730	7,751	10.6	66.4
Cardiology	112	4,769	23,905	5.0	58.5	73	2,319	15,313	6.6	57.5
General surgery	749	23,544	96,180	4.1	35.2	613	20,580	81,834	4.0	36.6
Vascular surgery	10	342	1,283	3.8	35.2	10	342	1,283	3.8	35.2
Geriatrics	51	1,003	16,354	16.3	87.9	51	1,003	16,354	16.3	87.9
Long-stay care	978	9,616	327,542	34.1	91.8	558	5,760	178,200	30.9	87.5
Endocrine, nutritional and metabolic diseases	10	33	304	9.2	8.3	10	33	304	9.2	8.3
General medicine	961	25,798	215,292	8.3	61.4	799	22,655	185,810	8.2	63.7
Nephrology	47	569	4,603	8.1	26.8	27	495	3,434	6.9	34.8
Neonatology	16	428	1,643	3.8	28.1	9	45	73	1.6	2.2
Neurosurgery	14	257	1,975	7.7	38.6					
Neurology	41	469	12,063	25.7	80.6	30	217	10,270	47.3	93.8
Neurological rehabilitation	55	216	20,085	93.0	100.0					
Ophthalmology	95	1,505	2,396	1.6	6.9	69	1,288	2,076	1.6	8.2
Oncology	35	1,062	7,315	6.9	57.3	35	1,062	7,315	6.9	57.3
Orthopedics and Traumatology	987	44,750	186,132	4.2	51.7	821	39,159	157,188	4.0	52.5
Obstetrics and gynaecology	236	11,646	38,769	3.3	45.0	201	8,587	28,644	3.3	39.0
Otorhinolaryngology	120	2,142	4,377	2.0	10.0	98	1,121	2,795	2.5	7.8
Pneumology	24	713	6,751	9.5	77.1	24	713	6,751	9.5	77.1
Psychiatry	282	2,885	93,244	32.3	90.6	189	2,263	66,731	29.5	96.7
Functional recovery and rehabilitation	1,950	23,486	609,192	25.9	85.6	1,022	13,115	321,438	24.5	86.2
Intensive care	27	1,184	5,274	4.5	53.5	4	337	640	1.9	43.8
Coronary care unit	28	1,700	6,376	3.8	62.4	8	647	1,829	2.8	62.6
Urology	128	6,274	22,019	3.5	47.1	109	5,662	18,930	3.3	47.6
Totals	*7,048*	*164,473*	*1,725,798*	*10.5*	*67.1*	*4,800*	*125,653*	*1,116,759*	*8.9*	*63.7*

Source: *processing by Ermeneia – data from the Ministry of Health*

Table S/60 – Activities of private hospitals (accredited healthcare facilities) classified according to specialty. 2013 (South)

Specialty	Total					AIOP-associated Private hospitals (accredited healthcare facilities)				
	Patient beds	Inpatients	In-hospital days	Average length of stay	Occupancy rate %	Patient beds	Inpatients	In-hospital days	Average length of stay	Occupancy rate %
Angiology	8	147	764	5.2	26.2	8	147	764	5.2	26.2
Heart surgery	248	12,855	83,670	6.5	92.4	215	10,036	68,967	6.9	87.9
Cardiology	725	50,615	201,385	4.0	76.1	582	38,197	160,688	4.2	75.6
General surgery	2,286	78,326	325,080	4.2	39.0	1,936	66,886	271,437	4.1	38.4
Maxillofacial surgery	28	1,753	2,272	1.3	23.0	21	1,709	2,161	1.3	28.2
Pediatric surgery	23	335	1,152	3.4	13.7	13	131	618	4.7	13.0
Plastic surgery	30	584	2,105	3.6	19.2	17	432	1,562	3.6	25.2
Thoracic surgery	13	491	3,448	7.0	72.7	10	394	2,601	6.6	71.3
Vascular surgery	139	4,810	20,994	4.4	41.4	116	3,789	15,420	4.1	36.4
Gastroenterology	29	732	5,936	8.1	56.1	26	591	5,074	8.6	53.5
Geriatrics	294	8,005	73,157	9.1	68.2	272	7,351	65,025	8.8	65.5
Long-stay care	1,079	6,073	175,746	28.9	44.6	771	4,107	111,514	27.2	39.6
Endocrine, nutritional and metabolic diseases	27	602	5,516	9.2	56.0	27	602	5,516	9.2	56.0
General medicine	1,474	57,144	386,684	6.8	71.9	1,300	50,609	348,500	6.9	73.4
Nephrology	48	2,150	11,228	5.2	64.1	39	1,756	10,100	5.8	71.0
Neonatology	22	769	4,038	5.3	50.3	8	474	1,994	4.2	68.3
Neurosurgery	76	3,587	17,348	4.8	62.5	71	3,467	16,413	4.7	63.3
Neurology	666	10,386	163,998	15.8	67.5	583	8,269	147,930	17.9	69.5
Neurological rehabilitation	145	957	51,665	54.0	97.6	145	957	51,665	54.0	97.6
Day nursery	75	3,147	9,705	3.1	35.5	75	3,147	9,705	3.1	35.5
Ophthalmology	155	5,130	14,854	2.9	26.3	136	2,505	10,166	4.1	20.5
Oncology	337	13,493	84,785	6.3	68.9	325	12,904	81,118	6.3	68.4
Orthopedics and Traumatology	1,464	60,432	258,462	4.3	48.4	1,269	49,249	217,699	4.4	47.0
Obstetrics and gynaecology	1,208	67,577	251,359	3.7	57.0	880	52,411	192,846	3.7	60.0
Otorhinolaryngology	223	6,228	16,625	2.7	20.4	187	5,356	14,236	2.7	20.9

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(Continued) *Table S/60 – Activities of private hospitals (accredited healthcare facilities) classified according to specialty. 2013 (South)*

Specialty	*Total*					*AIOP-associated Private hospitals (accredited healthcare facilities)*				
	Patient beds	*Inpatients*	*In-hospital days*	*Average length of stay*	*Occupancy rate %*	*Patient beds*	*Inpatients*	*In-hospital days*	*Average length of stay*	*Occupancy rate %*
Pneumology	108	4,029	31,457	7.8	79.8	68	2,747	19,926	7.3	80.3
Psychiatry	695	7,161	185,937	26.0	73.3	655	7,036	184,143	26.2	77.0
Radiation Therapy	10	114	1,142	10.0	31.3	10	114	1,142	10.0	31.3
Functional recovery and rehabilitation	3,270	40,227	1,007,623	25.0	84.4	2,272	30,097	738,432	24.5	89.0
Rheumatology	45	1,845	14,230	7.7	86.6	15	919	7,541	8.2	137.7
Intensive care	136	4,753	25,348	5.3	51.1	89	2,950	18,314	6.2	56.4
Neonatal intensive care	17	259	4,471	17.3	72.1	8	237	4,225	17.8	144.7
Coronary care unit	84	5,466	22,187	4.1	72.4	57	3,257	17,282	5.3	83.1
Spinal care unit	25	152	8,932	58.8	97.9					
Urology	488	21,546	88,491	4.1	49.7	430	18,015	76,686	4.3	48.9
Totals	15,700	472,242	3,561,794	7.5	62.2	12,636	383,031	2,881,410	7.5	62.5

Source: *processing by Ermeneia – data from the Ministry of Health*

Table S/61 – Differences of healthcare options across the country, assessed according to patient mobility using data on hospital admissions [(a)]. Years 2011-2015

Regions	2011		2012		2013		2014		2015			
	Inflow	*Outflow*	*Inflow*	*Outflow*	*Inflow*	*Outflow*	*Inflow*	*Outflow*	*Inflow*	*Outflow*	*Inflow/Outflow Ratio*	*Mobility balance[(b)]*
– Piedmont	0.87	1.15	0.84	1.19	0.83	1.20	0.86	1.17	0.84	1.19	1.4	-5,210
– Aosta Valley	0.50	2.00	0.59	1.69	0.68	1.47	0.69	1.45	0.69	1.45	2.1	-907
– Lombardy	2.37	0.42	2.47	0.40	2.48	0.40	2.44	0.41	2.53	0.39	0.2	69,271
– A.P. of Trento	0.58	1.74	0.61	1.63	0.61	1.65	0.63	1.60	0.65	1.54	2.4	-2,917
– Veneto	1.26	0.80	1.13	0.89	1.14	0.88	1.17	0.85	1.27	0.79	0.6	8,280
– Friuli V.G.	1.35	0.74	1.57	0.64	1.52	0.66	1.56	0.64	1.30	0.77	0.6	2,669
– Liguria	0.75	1.33	0.72	1.39	0.70	1.44	0.68	1.47	0.68	1.47	2.2	-8,632
– Emilia Romagna	2.43	0.41	2.39	0.42	2.43	0.41	2.44	0.41	2.41	0.41	0.2	47,436
– Tuscany	1.82	0.55	1.97	0.51	1.97	0.51	2.00	0.50	1.98	0.51	0.3	25,321
– Umbria	1.35	0.74	1.34	0.75	1.34	0.75	1.46	0.69	1.40	0.71	0.5	5,561
– Marche	0.95	1.05	0.88	1.14	0.93	1.07	0.92	1.09	0.84	1.19	1.4	-3,860
– Lazio	1.12	0.89	1.04	0.96	0.99	1.01	0.92	1.08	0.87	1.15	1.3	-7,374
– Abruzzo	0.66	1.51	0.71	1.42	0.66	1.52	0.64	1.57	0.67	1.49	2.2	-8,613
– Molise	1.25	0.80	1.20	0.83	1.18	0.85	1.17	0.85	1.16	0.86	0.7	1,981
– Campania	0.30	3.32	0.32	3.16	0.33	3.07	0.32	3.10	0.33	3.00	9.0	-36,115
– Apulia	0.53	1.90	0.52	1.91	0.54	1.84	0.55	1.82	0.55	1.81	3.3	-18,665
– Basilicata	0.70	1.42	0.71	1.41	0.73	1.37	0.83	1.20	0.82	1.22	1.5	-3,053
– Calabria	0.17	5.85	0.15	6.54	0.13	7.55	0.12	8.01	0.12	8.18	66.9	-35,548
– Sicily	0.26	3.83	0.29	3.47	0.30	3.36	0.31	3.24	0.28	3.61	13.0	-24,117
– Sardinia	0.38	2.64	0.35	2.85	0.33	3.04	0.33	3.02	0.33	3.05	9.3	-6,865

Data related to the Autonomous Province of Bolzano have not been provided here as they are strongly biased by migration abroad (notably to Austria).
(a) Mobility has been provided in percentage of incoming and outgoing acute patients, calculated on the inter-regional mobility matrices.
(b) Active and passive mobility balance of acute patients of each region.
Source: *processing by Ermeneia – data from the Ministry of Health*

3. *Staff information*

3.1. Staff fluctuation over the years

The data on staffing prepared by the Ministry of Health for the year 2015, showed a further reduction in staff in public hospital facilities as a whole, with a steadily declining trend since 2010 that has resulted in an overall reduction of 10.3% for the period. Thus, the decisive inversion of trend is further strengthened with respect to the growth observed in 2009, which we had in any case mainly attributed to the creation of new hospital centers and to a radical reclassification undertaken with the inclusion, among the directly managed hospitals and among the hospital centers, of some institutions previously included among the so-called 'assimilated' public hospitals. As always, it should be stressed that the values indicated do not include freelance or similarly employed personnel, which have nevertheless become part of the workforce over the last few years.

On the other hand, a look at the trends recorded in the period 2011-2015 (see Table S/62), shows that there was a decrease of 23,187 units, with the number of personnel going from 473,787 to 450,600 employees, resulting in a corresponding reduction of 4.9%.

Looking only at the public facilities under consideration, that is the hospital centers (including those integrated with universities) and hospitals directly managed by local health authorities, once again with reference to the years 2011 and 2015, and again taking into account what has already been explicitly stated, we can see the differences in the dynamics among the different professional figures: a decline in the number of doctors by 3,054 units, of nurses by 9,227 units, and of other staff by 10,906 units, as shown by the data in the following table:

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		2011	*2015*
–	Medical doctors and Dentists	86,789	83,735
–	Nurses	219,477	210,250
–	Other staff	167,521	156,615

An analysis of the indicator that shows the relationship between the personnel of the public facilities and the number of beds, shows that there is also a slight improvement for 2015 for both hospital centers and the hospitals of the local health authorities, noting however that the trend of these relationships continues to be strongly influenced by the change in the classifications and the changes of recent years in the public sphere (see Table S/64).

Moving to the side of the hospital system in which the accredited facilities that are part of AIOP operate, we can see an increase between 2011 and 2016 of 3,593 units, equal to a + 5.4% increase (Table S/65). This is an increase that affects both the medical staff and, to a greater extent, the nurses and the other personnel, yet once again taking into account the fact that the overall number of staff and their compositional breakdown into the various professional roles is strongly influenced by the variability in the consistency and in the type of the entire grouping of facilities (Table S/66).

3.2. Staff distribution throughout Italy

Healthcare personnel working in the public and private hospitals of the National Health Service as a whole amounted to more than 633,000 units (Table S/67), as shown in the latest ISTAT survey available, which, however, shows the situation for 2013. It shows a significant variability by region and by professional figure compared to the previous period, most likely due to a change in the method of data collection and classification.

The North continues to distinguish itself from the other territorial areas, as the part of the country in which all the professional components are most represented in the hospital, with an incidence on the total amounting to 52%.

The consistency and distribution of the employees of AIOP facilities, for which we have data updated at the end of 2016, are instead shown in Table S/68, which makes it possible to observe that the total number of operators employed was 62,307 units. The overall workforce is rounded out by 7,338 units of medical personnel and 4,594 units of non-medical personnel, whose services are offered through freelance collaboration agreements.

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Table S/62 – Staff trends in Hospital Centers and in the local health service (ASL) hospitalization facilities[(a)] (A.V.)

Type of institution / *Role*	*2011*		*2012*		*2013*		*2014*		*2015*	
	Hospital Centers (*)	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*
Medical doctors and Dentists	35,334	51,455	35,227	50,462	34,953	50,193	34,646	50,070	33,640	50,095
Nurses	94,662	124,815	93,900	122,719	93,622	120,679	93,119	119,010	90,937	119,313
Other	83,026	84,495	81,619	82,907	81,072	81,999	79,862	80,172	76,894	79,721
Total	*213,022*	*260,765*	*210,746*	*256,088*	*209,647*	*252,871*	*207,627*	*249,252*	*201,471*	*249,129*

(a) Staff working as self-employed professionals or similar contract types were not included.
(*) NHS staff and University staff.
(**) Residual mental health facilities are included.
Source: *data processed by Ermeneia from the Report "Attività gestionali ed economiche delle Asl e Aziende Ospedaliere", Ministry of Health, Years 2011, 2012, 2013, 2014 and 2015*

Table S/63 – Hospital Center and local health service (ASL) hospitalization facility staff (% var.)

Type of institution / *Role*	*2012/2011*		*2013/2012*		*2014/2013*		*2015/2014*		*2015/2011*	
	Hospital Centers (*)	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*
Medical doctors and Dentists	-0.3	-1.9	-0.8	-0.5	-0.9	-0.2	-2.9	0.0	-4.8	-2.6
Nurses	-0.8	-1.7	-0.3	-1.7	-0.5	-1.4	-2.3	0.3	-3.9	-4.4
Other	-1.7	-1.9	-0.7	-1.1	-1.5	-2.2	-3.7	-0.6	-7.4	-5.7
Total	-1.1	-1.8	-0.5	-1.3	-1.0	-1.4	-3.0	0.0	-5.4	-4.5

(a) Staff working as self-employed professionals or similar contract types were not included.
(*) NHS staff and University staff.
(**) Residual mental health facilities are included.
Source: *data processed by Ermeneia from the Report "Attività gestionali ed economiche delle Asl e Aziende Ospedaliere", Ministry of Health, Years 2011, 2012, 2013, 2014 and 2015*

Table S/64 – Hospital Center and local health service (ASL) hospitalization facility staff

	2011		2012		2013		2014		2015	
	Hospital Centers (*)	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*	*Hospital Centers (*)*	*ASL hospitalization facilities (**)*
Medical doctors per 10 patient beds	7.3	4.4	7.7	4.5	7.8	4.7	7.9	4.8	7.7	4.8
Nurses per 10 patient beds	19.5	10.6	20.6	11.0	20.8	11.3	21.3	11.4	20.8	11.4

(*) NHS staff and University staff.
(**) Residual mental health facilities are included.
Note: the numbers of medical doctors and nurses per patient bed has been calculated considering patient beds actually used.
Source: *data processed by Ermeneia from the Report "Attività gestionali ed economiche delle Asl e Aziende Ospedaliere", Italian Ministry of Health, Years 2011, 2012, 2013, 2014 and 2015*

Table S/65 – Staff working in medical institutions associated with AIOP. 2011-2016

Role	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*
Contract employee and self-employed doctors	11,788	11,810	11,773	11,815	11,948	12,191
Nurses	20,011	20,032	19,175	19,316	20,032	21,147
Other	34,253	34,445	34,242	34,537	34,445	36,307
Total	*66,052*	*66,287*	*65,190*	*65,668*	*66,425*	*69,645*

Note: surveying data related to staff can be significantly affected by institutions entering or leaving AIOP over the years.
Source: *AIOP data processed by Ermeneia*

Table S/66 – Staff working in medical institutions associated with AIOP. 2011-2016 (% var.)

	2012/2011	*2013/2012*	*2014/2013*	*2015/2014*	*2016/2015*	*2016/2011*
Contract employee and self-employed doctors	0.2	-0.3	0.4	1.1	2.0	3.4
Nurses	0.1	-4.3	0.7	3.7	5.6	5.7
Other	0.6	-0.6	0.9	-0.3	5.4	6.0
Total	*0.4*	*-1.7*	*0.7*	*1.2*	*4.8*	*5.4*

Note: surveying data related to staff can be significantly affected by institutions entering or leaving AIOP over the years.
Source: *AIOP data processed by Ermeneia*

Table S/67 – Total number of healthcare personnel employed in various healthcare institutions, by region. 2013

Regions	*Medical doctors*	*Nursing staff*	*Other staff*	*Total staff*
– Piedmont	9,477	20,078	21,750	51,305
– Aosta Valley	354	591	657	1,602
– Lombardy	22,026	48,097	54,356	124,479
– Trentino-Alto Adige	1,906	5,871	8,035	15,812
– Autonomous Province of Bolzano	948	3,203	4,785	8,936
– Autonomous Province of Trento	958	2,668	3,250	6,876
– Veneto	8,494	22,445	19,530	50,469
– Friuli Venezia Giulia	2,715	6,527	6,555	15,797
– Liguria	3,702	8,879	7,053	19,634
– Emilia Romagna	9,854	21,905	18,513	50,272
– Tuscany	8,362	17,898	13,588	39,848
– Umbria	1,933	3,827	2,827	8,587
– Marche	3,586	8,760	6,472	18,818
– Lazio	13,243	26,276	22,904	62,423
– Abruzzo	2,530	6,023	3,940	12,493
– Molise	651	1,482	1,345	3,478
– Campania	9,817	19,299	13,735	42,851
– Apulia	7,093	16,084	12,203	35,380
– Basilicata	1,085	2,650	2,137	5,872
– Calabria	3,221	6,273	4,949	14,443
– Sicily	10,223	17,923	14,206	42,352
– Sardinia	4,156	7,282	5,377	16,815
North	58,528	134,393	136,449	329,370
Center	27,124	56,761	45,791	129,676
South	38,776	77,016	57,892	173,684
Italy	*124,428*	*268,170*	*240,132*	*632,730*

Source: *ISTAT, healthcare institution facilities and activities*

Table S/68 – Staff working in medical institutions associated with AIOP. Updated to December, 31st 2016

Regions	*Contract employee operators*							*Self-employed professionals*	
	Medical doctors	*Nurses*	*Technicians*	*Auxiliary staff in Health and Social Care Settings*	*Other caregiver staff*	*Other staff*	*Total*	*Medical personnel*	*Non-medical personnel*
– Piedmont	195	1,044	301	447	485	996	3,468	529	325
– Aosta Valley	1	12	4	3	14	9	43	1	23
– Lombardy	1,292	5,467	1,662	1,120	1,816	4,293	15,650	2,052	897
– A. P. of Bolzano	3	67	33	21	33	39	196	10	9
– A. P. of Trento	17	81	25	37	88	72	320	5	15
– Veneto	280	1,400	407	213	743	917	3,960	314	163
– Friuli Venezia Giulia	57	203	94	29	151	235	769	48	43
– Liguria	3	98	15	5	12	120	253	11	39
– Emilia Romagna	153	1,977	466	386	918	1,063	4,963	666	547
– Tuscany	117	576	160	115	380	337	1,685	395	158
– Umbria	11	73	21	45	55	55	260	68	11
– Marche	78	340	69	77	150	265	979	123	82
– Lazio	614	3,292	1,237	1,731	1,142	2,535	10,551	1,234	728
– Abruzzo	132	598	175	240	58	269	1,472	69	20
– Molise	82	114	45	11	19	145	416	5	390
– Campania	794	2,076	736	761	628	1,497	6,492	551	502
– Apulia	346	1,292	432	560	146	833	3,609	96	245
– Basilicata	3	13	3	4	5	9	37	18	3
– Calabria	194	494	163	204	264	401	1,720	196	139
– Sicily	366	1,527	356	848	135	1,152	4,384	843	158
– Sardinia	115	403	70	80	164	248	1,080	104	97
Italy	*4,853*	*21,147*	*6,474*	*6,937*	*7,406*	*15,490*	*62,307*	*7,338*	*4,594*

Source: *AIOP*

4. Spending data

4.1. Economic flow trends over the years

The consolidated analytical data on National Health Service spending was also extrapolated for 2015 by the two different institutional sources used for the years 2013 and 2014, without any updates to the "Health Report" contained in the various editions of the General Report on the Economic Situation of the Country. Regarding the reactivation of the coordinated data flows on healthcare spending provided by this source until 2012, unfortunately there are as yet no indications from the MEF (Ministry of Economy and Finance). The historical data, already slightly corrected for some values starting in 2009, has been interrupted, because the definition of the different healthcare spending components adopted by the sources used since 2013 – Court of Auditors and Agenas – criteria may not fully correspond to the data from previous years.

Total public spending for the area of hospitalizations is estimated at EUR 62.3 billion for 2015, compared to EUR 61.2 billion a year earlier (with a 1.9% increase) (Table S/69).

The fraction of funding in this area attributed to the activity of private hospitals (accredited healthcare facilities) is EUR 4.3 billion, equal to 7.0% of total public hospital spending; an incidence that has become stable over the last three years following the continual decline compared to the 8.4% recorded in 2000. This was also due to the effects of the spending review (Law 135/12), described in previous editions of the Report and the subsequent healthcare spending containment maneuvers.

The representation in real terms (at constant prices) of spending levels (Table S/70) again this year follows the determination of the calculation based on the GDP deflator of the ISTAT series chained to 2010; the change in total public hospital spending between the base year and 2015 is thus equal

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to -3.9%, a less marked decrease compared to that recorded by total healthcare spending (-4.5%). In the same period, on the other hand, spending for private hospitals (accredited healthcare facilities) experienced, in real terms, a more marked reduction (-7.9%), above all due to the cuts in the fees paid in this area (both in terms of fee levels and budgeting). The generally unfavorable trend of spending data at constant prices, however, has influenced the value of real GDP, according to the estimates of the DEF 2017, in fact, the indicator of national wealth reversed its negative trend starting only in 2015, recording a decrease of -2.9% compared to 2010.

4.2. Health expenditure comparisons

The October 2017 edition of OECD "Health Data" allows us to construct the usual framework for comparing healthcare spending within the group of 24 of the largest member countries of the organization. Table S/71 shows those most commonly used by industry analysts: the incidence of total health expenditure and of public health expenditure compared to GDP.

In 2015, the propensity for the gradual decline in resources in terms of GDP assigned to the NHS continues to be seen for Italy, thereby accentuating the gap accumulated over time compared to the average for both OECD Europe countries and those of the G7 group (6.7% compared to 7.2% and 8.2%, respectively). This is a non-transitional trend rendered official by the provisional data of the latest version of the Economic and Financial Document produced by the MEF which would, in the absence of corrective measures, lead to a GDP expenditure curve of 6.3% in 2020.

Even in terms of total health expenditure, Italy shows a ratio to GDP below the average of the G7 countries (9% compared to 11.3%), still remaining below the average of OECD Europe (which is 9.4%).

This trend of invariance in the three-year period 2013-2015 of the total Italian healthcare spending, stalled at exactly 9% according to the OECD, shows how, in the face of the progressive reduction of public commitment part of the healthcare needs are financed directly by the citizens; a fact that is attested to in the special caregiver survey in Part Three of the Report. Again in terms of total health expenditure, Italy is still below the 2015 values of the most industrialized countries, the United States, France, Germany and Canada (which present values of 16.9%, 11.1%, 11.2% and 10.3%, respectively). And similarly, although with different relative positions, this is true for the first three countries mentioned also with regard to public healthcare spending.

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Thus, the downsizing of Italy's commitment in terms of the use of resources for health in relation to GDP with respect to the major Western countries continues. This is within the context of that progressive defunding that could lead our health service towards a new dimension of so-called "selective universal care", along with that of overall sustainability, and a new configuration, still in the planning stage, of the so-called "Second pillar"; a configuration based on the hypothetical transfer of a significant part of the out-of-pocket spending towards the amount intermediated by health, insurance and new mutual funding. The increases in current values of the Health Fund seem to only partially offset all of this, given that the 114 billion allocated for 2017 would already be seriously reduced by the forecasted 600 million in contributions by the Regions to public funding and 1.3 billion for the new staff contracts; not to mention the coverage of new high-cost life-saving drug therapies.

Finally, if we consider in particular the sole share of healthcare spending destined for hospital activity (Table S/72), once again with reference to the year 2015, it can be noted that Italy:

– has a higher proportion (57.3%%) of total public healthcare spending compared to the average for the G7 countries (44.5%), and compared to that of European OECD countries (45.7%);
– has a GDP spending ratio slightly above the average of the G7 countries and the European OECD countries (3.6% and 3.3%, respectively).

Table S/69 – Current health spending. Years 2011-2015 (in billions of euro)

	2011	*2012*	*2013*	*2014*	*2015*
Public hospital facilities	52.892	53.074	52.244	52.744	53.847
Accredited hospital system	8.641	8.659	8.255	8.425	8.466
including: private hospitals (accredited healthcare facilities)	4.465	4.471	4.263	4.289	4.335
Total public hospital system expenditure	61.533	61.733	60.499	61.169	62.313
Other expenditure features	51.276	51.950	51.185	51.504	50.354
Total public healthcare expenditure	*112.809*	*113.683*	*111.684*	*112.673*	*112.667*

(*) The relevant historical data on expenditure was furtherly updated in the "General Report on the Economic Situation of the Country", year 2012, this data, however, is interrupted due to the uncertainty about the continuity of the same publication by the RGE in the future. For 2013, 2014 and 2015 the expenditure figures were taken from the 2015, 2016 and 2017 Report on the coordination of public finance by the Court of Auditors and the Agenas Report on the monitoring of the spending of the Regions.

Source: *data processed by Ermeneia from the "General Report on the Country's Economic Situation", 2012, Vol. II, from the 2015, 2016 and 2017 "Report on the coordination of public finance" by the Court of Auditors and the Agenas Report on the monitoring of the spending of the Regions*

Table S/70 – Healthcare expenditure at constant prices (*). 2011-2015 (in billions of euro)

	2011	*2012*	*2013*	*2014*	*2015*
Public hospital facilities	52.127	51.594	50.179	50.178	50.789
Accredited hospital system	8.516	8.418	7.929	8.015	7.985
including: private hospitals (accredited healthcare facilities)	4.400	4.346	4.094	4.080	4.089
Total public hospital system expenditure	60.643	60.011	58.108	58.193	58.774
Other expenditure features	50.534	50.501	49.162	48.998	47.494
Total public healthcare expenditure	*111.176*	*110.513*	*107.269*	*107.191*	*106.268*

(*) GDP deflator calculated on the basis of the new ISTAT series in a chained series with reference to 2010.

Source: *data processed by Ermeneia from the "General Report on the Country's Economic Situation", 2012, Vol. II, from the 2015, 2016 and 2017 "Report on the coordination of public finance" by the Court of Auditors and the Agenas Report on the monitoring of the spending of the Regions*

Table S/71 – Amount of total healthcare expenditure and public healthcare spending in relation to the GDP

% Values	*Total Healthcare Spending*			*Public Healthcare Spending*		
	2013	*2014*	*2015*	*2013*	*2014*	*2015*
United States	16.3	16.5	16.9	8.0	8.2	8.3
Japan	10.8	10.8	10.9	9.1	9.1	9.2
Germany	11.0	11.1	11.2	9.2	9.3	9.4
France	10.9	11.1	11.1	8.6	8.7	8.7
Italy	**9.0**	**9.0**	**9.0**	**6.8**	**6.8**	**6.7**
United Kingdom	9.9	9.8	9.9	7.8	7.8	7.9
Canada	10.1	10.0	10.3	7.1	7.0	7.2
Average of G7 countries (*)	11.1	11.2	11.3	8.1	8.1	8.2
Australia	8.8	9.1	9.4	5.9	6.1	6.4
Austria	10.2	10.3	10.3	7.7	7.8	7.8
Belgium	10.4	10.4	10.5	8.0	8.0	8.1
Denmark	10.2	10.3	10.3	8.6	8.6	8.7
Finland	9.5	9.5	9.4	7.1	7.1	7.0
Greece	8.3	7.9	8.4	5.2	4.6	5.0
Iceland	8.7	8.8	8.6	7.0	7.1	7.0
Ireland	10.4	9.9	7.8	7.3	6.9	5.4
Luxembourg	6.5	6.3	6.0	5.4	5.2	5.0
Holland	10.9	10.9	10.7	8.8	8.8	8.6
New Zealand	9.4	9.4	9.3	7.5	7.5	7.5
Norway	8.9	9.3	10.0	7.6	8.0	8.5
Portugal	9.1	9.0	9.0	6.1	6.0	5.9
Spain	9.0	9.1	9.2	6.4	6.4	6.5
Sweden	11.1	11.1	11.0	9.3	9.3	9.2
Sweden	11.4	11.6	12.1	7.4	7.4	7.7
Turkey	4.4	4.3	4.1	3.5	3.4	3.2
Average of European OECD countries (*)	9.5	9.5	9.4	7.2	7.2	7.2
Average of all OECD countries (*)	9.8	9.8	9.8	7.3	7.3	7.3

(*) Average values are calculated as unweighted arithmetic means.
Source: *data processed by Ermeneia from "OECD Health Data 2017", OECD, Paris, October 2017*

Table S/72 – Public and Accredited Hospital Expenditure in relation to the public healthcare spending and the GDP

% Values	*Public and Accredited Hospital Expenditure / Total Public Healthcare Spending*			*Public and Accredited Hospital Expenditure/GDP*		
	2013	*2014*	*2015*	*2013*	*2014*	*2015*
United States	37.4	36.6	36.2	3.0	3.0	3.0
Japan	44.3	44.0	-	4.0	4.0	-
Germany	33.6	33.5	33.2	3.1	3.1	3.1
France	46.8	47.2	47.3	4.0	4.1	4.1
Italy	**56.8**	**57.0**	**57.3**	**3.9**	**3.9**	**3.9**
United Kingdom	47.7	47.8	48.6	3.7	3.7	3.8
Canada	39.4	39.0	-	2.8	2.7	-
Average of G7 countries (*)	43.7	43.6	44.5	3.5	3.5	3.6
Australia	50.5	50.9	-	3.0	3.1	-
Austria	46.4	46.3	46.2	3.6	3.6	3.6
Belgium	33.8	33.4	34.1	2.7	2.7	2.8
Denmark	49.7	49.4	49.3	4.3	4.3	4.3
Finland	42.3	41.5	42.5	3.0	2.9	3.0
Greece	50.3	48.6	48.0	2.6	2.2	2.4
Iceland	48.0	48.1	48.3	3.4	3.4	3.4
Ireland	35.0	35.2	35.1	2.6	2.4	1.9
Luxemburg	36.0	34.7	34.0	1.9	1.8	1.7
Holland	40.0	39.1	43.4	3.5	3.4	3.7
New Zealand	-	-	-	-	-	-
Norway	45.2	45.4	46.3	3.4	3.6	3.9
Portugal	54.3	54.1	54.3	3.3	3.2	3.2
Spain	54.4	55.3	56.2	3.5	3.5	3.7
Sweden	44.9	45.4	45.1	4.2	4.2	4.2
Switzerland	44.6	44.2	44.2	3.3	3.3	3.4
Turkey	54.6	54.5	54.9	1.9	1.8	1.8
Average of European OECD countries (*)	45.5	45.3	45.7	3.3	3.2	3.3
Average of all OECD countries (*)	45.0	44.8	45.2	3.2	3.2	3.2

(*) Average values are calculated as unweighted arithmetic means.

Source: data processed by Ermeneia from "OECD Health Data 2017", OECD, Paris, October 2017

Appendices

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1. Methods applied

Again for the year 2017, the preparation of the Report made use of several methodological methods.

The first of these is based on the identification and review of some key phenomena distinctive for the last twelve months: the whole of which was placed in Part One of this volume.

Specifically, the most significant phenomena were assessed, and these show:

a) on the one hand, the consolidation of the reaction strategies by users and citizens to deal with the progressive worsening of public healthcare and social assistance services: more out-of-pocket spending, the search for alternatives to public hospitals, the use of the accredited private sphere and private clinics, making use (albeit improper) of the Emergency Room in order to avoid excessively lengthy waiting times and to find higher quality professionals and services in the hospital compared to those available in local health authority outpatient clinics;
b) and on the other hand, the difficulty of evolving a transparent, reliable and comparable reporting system that can be used to better comprehend the areas of inefficiency and to thus identify potential areas for necessary restructuring and reorganization, in particular of public hospitals;
c) the continuing need to maintain – and even improve – the level of public hospital and accredited private hospital services and to promote the mixed system that the country has.

With regard to the reporting and possible areas of inefficiency, the Income Statements of 34 Hospital Centers were examined in order to find any "anomalies" and to further explore one in particular, that relating to "by function" activities. To this end, the following steps were taken:

1) the basic entries (Revenues, Costs, Operating Results) present in the 4-year Income Statements (from 2013 to 2016) were recovered from the

Reports of the Financial Statements of the 34 Hospitals: Table App. 1 shows these items, and their breakdowns, with the values grouped by Regions and by territorial districts, respectively.
These are 2/3 of the current Hospital Centers (53), with a well-balanced distribution between the North (13), Central Italy (7) and the South (14). Not all of the Hospital Centers that were examined in the last Report were used this time, as Lombardy (with 29 Hospital Centers) has changed its organizational system, incorporating territorial-type activities within the Centers. This has also been the case for some specific Centers in the Region of Friuli Venezia Giulia and the Region of Sardinia;

2) four types of comparison were selected for illustrative purposes, starting from the four years considered and making use of specific Index Numbers:
   - the trend in the number of in-hospital stays compared to the trend of revenues from healthcare services;
   - the trend in the number of in-hospital stays and the trend in costs for the purchase of goods and services;
   - the trend in revenues from "by function" activities, taking into account the percentage of such revenues out of those deriving from healthcare services and from co-payment charges, but also calculating the impact assessed on the basis of the mechanism envisaged by the Ministerial Decree implementing Art. 1, paragraph 526 of the 2016 Stability Law, starting from Art. 8-*sexies* of Legislative Decree 502/1992 and subsequent amendments. The Decree states that "the total amount of payment for "by function" activities may not in any case exceed 30% of the already assigned payment limit". Please also note that already in the 2016 budget the Hospital Centers were supposed to incorporate this provision, while directly managed Hospitals should begin to incorporate it starting in 2017;
3) the "by function" activity entry was then examined, which often has decidedly (or rather excessively) high values compared to the characteristic activities of the Hospital Centers: in some cases (for example in 2016) the percentage of these characteristic activities (revenues from healthcare services + co-payment charges) is more than 30% higher, and even 40%, 50% or more than 60% higher and, in one case, even in excess of 80% (especially in the South, but not only), as has been reported in Table 3 of Section 4.1 of the Part One. It is clear that the "by function" activity entry represents a sort of aggregate item that – given the number of activities and the relative value attributed to them – may also include amounts of inefficiency or, in other words, implicit forms of budget coverage;

4) for these reasons, as well as to reason using "real" data and not only by preparing simulations based on "virtual" data as was done in the 2016 Report, we decided to report the consequences of the implementation of the Ministerial Decree cited in the point 2) above.
   In concrete terms we proceeded through the following steps:
   a) first of all, the amount of "by function" activities exceeding 30% of revenues from healthcare services + co-payment charges was calculated, assessed on the basis of the provisions of the aforementioned Ministerial Decree. This was done because in some (not only a few) cases, these exceeded the (decidedly "generous") aforementioned 30% limit. The Hospital Centers that exceeded this limit are identified in Table App. 2, yielding an estimate of extra-revenues equal to EUR 431 million.
      This value was then projected onto the total of the Italian Hospital Centers, taking into account that:
      – for the 34 companies examined, the corresponding value is exactly EUR 431 mil.
      – for the remaining 29 Hospital Centers the calculation made was proportional to the total value of the "by function" activities and assumed an equal distribution of the "overrun" over 30%, amounting to EUR 212 mil.

      Total **EUR 643 mil.**
   b) the next step was that of estimating the possible extra-revenues that might in any case be reasonably present even within the values of "by function" activities, even when purged from the amount in excess of the 30% limit envisaged by the Ministerial Decree.
      The estimation criterion used was that used in the 2016 Report, that is to say a sort of "differentiation" of between 20% and 30% of the total 2016 "by function" activities, assumed to be potential extra-revenues[1].
      The calculation was as follows:
      – 20%-30% of the value of the 2016 "by function" activities of the 34 Hospital Centers (compared to the total of "by function" activities, equal to EUR 2,857 million), amounts to: EUR 571-857 mil.

[1] The assumed 20% -30% differentiation has already been noted in the simulation carried out for the *Health&Hospitals/2010* Report, when it was estimated, without any well-founded criticism by the various Regional Health Systems, that the rate of implicit inefficiency in the public hospital system was between 20.5% for hospital facilities in the North and 34.7% for hospital facilities in the South.

– this "differentiation", purged of the EUR 431 mil. calculated on the basis of the extra 30% value, would be EUR 140-126 mil.
– 20%-30% of the value of the "by function" activities of the remaining 29 Hospital Centers (compared to the total of their "by function" activities, equal to EUR 1,405 million), amounts to **EUR 281-422** mil.

Total **EUR 421-848 mil.**

c) to the figures thus far estimated, the actual value of the budget deficits for 2016 should be added for all 53 Hospital Centers, which are, respectively:
– for the North EUR 11 mil.
– for Central Italy EUR 466 mil.
– and for the South EUR 62 mil.

Total Italian Hospital Centers **EUR 539 mil.**

d) at this point the estimate of the extra-revenues of the Italian Hospital Centers (including the deficits that in one way or another will have to be repaid or charged collectively) fall into the following "differentiation":

	(in millions of EUR)	
	Min.	*Max*
– Total from point a)	643	643
– Total from point b)	421	848
– Total from point c)	539	539
Total	**1,603**	**-2,030**

e) if we then wish to expand the estimate, albeit in a rough manner, to include the directly managed Hospitals (which today also include the 29 former Hospital Centers in Lombardy as well as the 2 in Friuli Venezia Giulia and the one in Sardinia), we can assume that they would receive the same amount of extra-revenues calculated for the Hospital Centers, also given the fact that the 2016 value of the hospital production revenues (in-hospital stays, co-payment charges, File F, etc.) is more than twice that of the total of the Hospital Centers (EUR 33.4 million compared to EUR 15.7 million) **1,603 -2,030**

GRAND TOTAL **3,206 -4,060**

Table App. 1 – Comparison of 2013 to 2016 data for costs and revenues of Hospital Centers as per the Income Statement (revenues and costs in thousands of euros)

Hospital Centers	***Number of impatient admissions and day hospital admissions***				***Revenues from healthcare services and health-related social health services as per the IS (Cod. A0320)***				***Revenues from co-payment charges for external specialist services as per the IS (Cod. A0940)***			
	2013	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***
H.C. 1	19,230	18,300	17,050	16,800	106,572	104,135	105,525	108,473	2,601	2,511	2,615	2,569
H.C. 2	29,200	28,200	32,590	28,500	181,948	183,365	190,873	193,471	6,534	6,900	6,564	5,598
H.C. 3	28,700	27,500	27,500	27,350	174,424	168,874	174,785	179,357	5,441	5,227	5,067	5,007
H.C. 4	26,000	25,100	25,600	25,550	153,780	149,070	154,878	162,387	3,336	3,142	3,297	3,273
H.C. 5	23,300	22,200	22,900	21,000	125,885	119,436	119,526	124,437	4,035	4,039	3,862	3,738
H.C. 6	100,070	84,150	95,050	94,800	540,499	529,186	542,128	540,077	14,648	15,181	13,454	12,178
Piedmont Total	***226,500***	***205,450***	***220,690***	***214,000***	***1,283,108***	***1,254,066***	***1,287,715***	***1,308,202***	***36,595***	***37,000***	***34,859***	***32,363***
H.C. 7	53,080	52,360	**57,100**	**55,950**	420,359	411,834	417,531	419,487	8,663	8,821	8,635	8,373
H.C. 8	51,500	51,960	**59,270**	**64,535**	394,620	401,961	429,078	443,432	6,541	6,800	6,974	7,510
Veneto Total	***104,580***	***104,320***	***116,370***	***120,485***	***814,979***	***813,795***	***846,609***	***862,919***	***15,204***	***15,621***	***15,609***	***15,883***
H.C. 9	47,960	47,438	47,483	47,204	293,863	299,822	303,994	305,869	6,669	6,889	6,739	6,794
H.C. 10	38,412	37,511	37,126	36,892	235,358	237,076	237,684	239,051	8,767	9,326	9,051	7,971
H.C. 11	33,698	32,574	32,198	31,680	206,473	205,873	206,136	205,278	3,138	3,152	3,255	3,849
H.C. 12	69,833	68,374	67,884	68,736	427,878	432,141	434,604	445,392	7,777	7,393	6,805	7,103
H.C. 13	32,497	32,104	31,809	31,289	199,118	202,904	203,645	202,749	6,094	6,129	6,085	6,043
Emilia Romagna Total	***222,400***	***218,000***	***216,500***	***215,800***	***1,362,690***	***1,377,816***	***1,386,063***	***1,398,339***	***32,445***	***32,889***	***31,935***	***31,760***
NORTH ITALY TOTAL	**553,480**	**527,770**	**553,560**	**550,285**	**3,460,777**	**3,445,677**	**3,520,387**	**3,569,460**	**84,244**	**85,510**	**82,403**	**80,006**
H.C. 14	26,792	26,611	25,237	24,678	151,700	144,679	141,250	145,348	3,286	3,186	3,364	3,607
H.C. 15	49,178	47,919	46,053	46,122	278,445	260,532	257,758	271,644	4,504	4,422	4,318	4,437
Marche Total	***75,970***	***74,530***	***71,290***	***70,800***	***430,145***	***405,211***	***399,008***	***416,992***	***7,790***	***7,608***	***7,682***	***8,044***
H.C. 16	49,610	47,922	38,706	34,599	241,829	238,751	232,965	224,195	6,418	6,222	5,336	4,743
H.C. 17	25,459	23,227	21,884	19,783	124,100	115,718	131,718	128,192	3,515	3,370	3,179	2,980
H.C. 18	65,373	61,261	52,344	48,843	318,664	305,205	315,050	316,490	11,307	10,950	10,188	10,386
H.C. 19	27,172	26,600	22,793	21,177	132,453	132,524	137,186	137,225	4,760	4,464	4,168	4,146
H.C. 20	34,586	35,489	31,272	29,767	168,593	176,806	188,218	192,885	6,009	5,580	5,572	5,213
Lazio Total	***202,200***	***194,500***	***167,000***	***154,170***	***985,639***	***969,004***	***1,005,137***	***998,987***	***32,009***	***30,586***	***28,443***	***27,468***
CENTRAL ITALY TOTAL	**278,170**	**269,030**	**238,290**	**224,970**	**1,415,784**	**1,374,215**	**1,404,145**	**1,415,979**	**39,799**	**38,194**	**36,125**	**35,512**

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(Continued) Table App. 1 – Comparison of 2013 to 2016 data for costs and revenues of Hospital Centers as per the Income Statement (revenues and costs in thousands of euros)

Hospital Centers	***Number of impatient admissions and day hospital admissions***				***Revenues from healthcare services and health-related social health services as per the IS (Cod. A0320)***				***Revenues from co-payment charges for external specialist services as per the IS (Cod. A0940)***			
	2013	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***
H.C. 21	74,633	70,926	66,659	66,300	299,652	305,360	317,373	298,153	5,989	5,708	5,675	4,569
H.C. 22	40,937	38,194	36,511	36,200	164,363	164,439	173,831	162,790	2,820	2,806	2,793	2,437
Apulia Total	***115,570***	***109,120***	***103,170***	***102,500***	***464,015***	***469,799***	***491,204***	***460,943***	***8,809***	***8,514***	***8,468***	***7,006***
H.C. 23	28,168	26,527	26,083	28,213	98,057	97,212	96,652	117,375	2,042	2,054	1,849	2,036
H.C. 24	27,294	25,989	25,746	24,277	95,012	95,238	95,405	105,500	2,560	2,332	2,451	2,510
H.C. 25	10,305	9,830	9,869	9,855	35,871	36,024	**36,571**	41,000	1,778	1,610	1,560	1,508
H.C. 26	27,173	25,554	25,022	23,556	94,593	93,643	**92,720**	98,000	1,586	1,694	1,695	1,502
Calabria Total	***92,940***	***87,900***	***86,720***	***85,900***	***323,533***	***322,117***	***321,348***	***361,875***	***7,966***	***7,690***	***7,555***	***7,556***
H.C. 27	25,812	21,525	20,377	22,009	117,627	113,251	121,004	121,030	1,464	1,380	1,366	1,404
H.C. 28	34,129	28,738	27,531	32,213	155,528	151,207	163,486	177,138	2,430	2,303	2,333	2,335
H.C. 29	46,968	40,938	39,860	44,207	214,039	215,396	236,698	243,093	4,248	3,979	3,944	3,917
H.C. 30	19,918	16,538	15,211	16,918	90,768	87,012	90,324	93,034	1,322	1,231	1,237	1,161
H.C. 31	25,948	23,380	23,242	26,679	118,246	123,015	138,017	146,708	2,639	2,466	2,479	2,371
H.C. 32	34,593	29,411	27,965	-	157,644	154,744	166,061	174,053	2,033	1,985	1,873	1,744
H.C. 33	35,437	30,527	27,117	31,202	161,492	160,615	161,024	171,581	2,084	1,890	1,749	1,736
H.C. 34	26,636	23,048	23,775	30,272	121,383	121,264	141,180	166,466	1,884	1,806	1,754	1,715
Sicily Total	***249,441***	***214,104***	***205,078***	***203,500***	***1,136,727***	***1,126,504***	***1,217,794***	***1,293,103***	***18,104***	***17,040***	***16,735***	***16,383***
SOUTH ITALY TOTAL	**457,951**	**411,124**	**394,968**	**391,900**	**1,924,275**	**1,918,420**	**2,030,346**	**2,115,921**	**34,879**	**33,244**	**32,758**	**30,945**
OVERALL TOTAL	**1,289,601**	**1,207,924**	**1,186,818**	**1,167,155**	**6,800,836**	**6,738,312**	**6,954,878**	**7,101,360**	**158,922**	**156,948**	**151,286**	**146,463**

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(Continued) Table App. 1 – Comparison of 2013 to 2016 data for costs and revenues of Hospital Centers as per the Income Statement (revenues and costs in thousands of euros)

Hospital Centers	***Revenues for "by function" activities as per the IS (Cod. AA0030)***				***Other revenues as per the IS***				***Total Revenues as per the IS (Cod. AZ999)***			
	2013	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***
H.C. 1	36,673	31,600	34,500	40,908	7,707	8,909	12,880	11,843	153,553	147,155	155,520	163,793
H.C. 2	64,002	66,200	74,041	89,816	10,563	10,730	14,850	14,151	263,047	267,195	286,328	303,036
H.C. 3	48,028	48,500	49,400	53,977	8,228	7,249	9,277	7,714	236,121	229,850	238,529	246,055
H.C. 4	62,321	60,010	65,400	72,369	8,343	8,400	9,790	9,364	227,780	220,622	233,365	247,393
H.C. 5	37,884	42,438	42,360	51,755	7,635	3,023	5,331	5,342	175,439	168,936	171,079	185,272
H.C. 6	366,810	357,400	362,282	369,228	80,607	73,454	94,942	94,845	1,002,564	975,221	1,012,806	1,016,328
Piedmont Total	***615,718***	***606,148***	***627,983***	***678,053***	***123,083***	***111,765***	***147,070***	***143,259***	***2,058,504***	***2,008,979***	***2,097,627***	***2,161,877***
H.C. 7	**94,209**	**138,893**	**136,414**	**165,421**	42,946	-6,708	17,972	-11,858	566,177	552,840	580,552	581,423
H.C. 8	**97,171**	**107,648**	**130,392**	**121,234**	15,710	10,969	9,347	17,958	514,042	527,378	575,791	590,134
Veneto Total	***191,380***	***246,541***	***266,806***	***286,655***	***58,656***	***4,261***	***27,319***	***6,100***	***1,080,219***	***1,080,218***	***1,156,343***	***1,171,557***
H.C. 9	47,817	62,711	55,152	58,155	28,629	12,199	17,145	15,817	376,978	381,621	383,030	386,635
H.C. 10	33,939	32,920	35,667	35,667	7,978	11,907	8,938	12,415	286,042	291,229	291,340	295,104
H.C. 11	33,897	43,200	44,960	44,960	20,628	8,957	10,375	11,308	264,136	261,182	264,726	265,395
H.C. 12	76,387	89,465	83,400	91,752	46,192	29,029	48,284	29,688	558,234	558,028	573,093	573,935
H.C. 13	36,703	77,290	85,028	85,221	62,889	21,445	25,967	28,387	304,804	307,768	320,725	322,400
Emilia Romagna Total	***228,743***	***305,586***	***304,207***	***315,755***	***166,316***	***83,537***	***110,709***	***97,615***	***1,790,194***	***1,799,828***	***1,832,914***	***1,843,469***
NORTH ITALY TOTAL	**1,035,841**	**1,158,275**	**1,198,996**	**1,280,463**	**348,055**	**199,563**	**285,098**	**246,974**	**4,928,917**	**4,889,025**	**5,086,884**	**5,176,903**
H.C. 14	**56,448**	**66,451**	**62,730**	**72,419**	8,733	3,514	11,438	173	220,167	217,830	218,782	221,547
H.C. 15	**73,269**	**91,200**	**102,162**	**94,570**	14,683	20,208	18,638	10,794	370,901	376,362	382,876	381,445
Marche Total	***129,717***	***157,651***	***164,892***	***166,989***	***23,416***	***23,722***	***30,076***	***10,967***	***591,068***	***594,192***	***601,658***	***602,992***
H.C. 16	60,354	69,985	53,605	46,153	24,450	15,140	18,058	15,875	333,051	330,098	309,964	290,966
H.C. 17	21,463	30,429	20,918	17,432	18,157	17,360	20,947	29,177	167,235	166,877	176,762	177,781
H.C. 18	95,541	106,828	85,192	81,914	31,871	29,370	30,508	38,406	457,383	452,353	440,938	447,196
H.C. 19	19,436	23,952	20,043	18,632	17,193	14,761	14,351	13,984	173,842	175,701	175,748	177,384
H.C. 20	31,207	35,118	34,016	33,981	7,965	7,426	9,887	8,324	213,774	224,930	237,693	240,403
Lazio Total	***228,001***	***266,312***	***213,774***	***198,112***	***99,636***	***84,057***	***93,751***	***105,766***	***1,345,285***	***1,349,959***	***1,341,105***	***1,333,730***
CENTRAL ITALY TOTAL	**357,718**	**423,963**	**378,666**	**365,101**	**123,052**	**107,779**	**123,827**	**116,733**	**1,936,353**	**1,944,151**	**1,942,763**	**1,936,722**

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(Continued) Table App. 1 – Comparison of 2013 to 2016 data for costs and revenues of Hospital Centers as per the Income Statement (revenues and costs in thousands of euros)

Hospital Centers	***Revenues for "by function" activities as per the IS (Cod. AA0030)***				***Other revenues as per the IS***				***Total Revenues as per the IS (Cod. AZ999)***			
	2013	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***
H.C. 21	**160,843**	**188,356**	**156,616**	**155,241**	6,530	1,858	-3,591	7,969	473,014	501,282	476,073	465,932
H.C. 22	**78,809**	**81,625**	**73,454**	**73,154**	3,600	2,975	2,871	7,642	249,592	251,845	252,949	246,023
Apulia Total	***239,652***	***269,981***	***230,070***	***228,395***	***10,130***	***4,833***	***-720***	***15,611***	***722,606***	***753,127***	***729,022***	***711,955***
H.C. 23	**84,427**	83,950	85,145	**66,398**	2,517	5,549	7,410	4,330	187,043	188,765	191,056	190,139
H.C. 24	**67,476**	66,200	65,400	67,599	4,165	6,454	13,023	-2,609	169,213	170,224	176,279	173,000
H.C. 25	**14,849**	14,349	10,344	3,000	12,731	5,969	6,075	5,492	65,229	57,952	54,550	51,000
H.C. 26	**63,996**	63,996	63,000	56,000	4,415	8,886	8,389	15,094	164,590	168,219	**165,804**	**170,596**
Calabria Total	***230,748***	***228,495***	***223,889***	***192,997***	***23,828***	***26,858***	***34,897***	***22,307***	***586,075***	***585,160***	***587,689***	***584,735***
H.C. 27	63,525	67,730	67,494	67,685	6,084	11,715	5,580	10,539	188,700	194,076	195,444	200,658
H.C. 28	71,728	80,684	74,643	75,078	8,684	4,172	8,629	2,739	238,370	238,366	249,091	257,290
H.C. 29	136,862	139,702	145,198	142,094	27,166	32,415	19,009	14,562	382,315	391,492	404,849	403,666
H.C. 30	79,450	103,931	88,302	79,646	5,143	5,524	3,641	7,606	176,683	197,698	183,504	181,447
H.C. 31	57,758	57,620	54,844	54,525	6,450	5,042	3,505	6,174	185,093	188,143	198,845	209,778
H.C. 32	117,156	131,790	122,478	109,141	13,994	5,403	4,157	8,624	290,827	293,922	294,569	293,562
H.C. 33	146,799	167,800	165,573	149,380	23,346	19,446	20,861	36,929	333,721	349,751	349,207	359,626
H.C. 34	61,744	93,812	92,770	79,042	14,122	-4,203	-2,576	8,459	199,133	212,679	233,128	255,682
Sicily Total	***735,022***	***843,069***	***811,302***	***756,591***	***104,989***	***79,514***	***62,806***	***95,632***	***1,994,842***	***2,066,127***	***2,108,637***	***2,161,709***
SOUTH ITALY TOTAL	**1,205,422**	**1,341,545**	**1,265,261**	**1,177,983**	**138,947**	**111,205**	**96,983**	**133,550**	**3,303,523**	**3,404,414**	**3,425,348**	**3,458,399**
OVERALL TOTAL	**2,598,981**	**2,923,783**	**2,842,923**	**2,823,547**	**610,054**	**418,547**	**505,908**	**497,257**	**10,168,793**	**10,237,590**	**10,454,995**	**10,572,024**

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(Continued) Table App. 1 – Comparison of 2013 to 2016 data for costs and revenues of Hospital Centers as per the Income Statement (revenues and costs in thousands of euros)

Hospital Centers	***Cost for the Purchase of Goods (Cod. BA010)***				***Cost for the Purchase of Health Services (Cod. BA400)***				***Cost for the Purchase of Non-Health Services (Cod. BA1570)***			
	2013	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***
H.C. 1	46,390	45,969	51,422	55,241	12,110	11,214	11,300	11,165	11,267	13,188	11,200	11,094
H.C. 2	61,468	64,774	74,082	76,095	22,648	26,438	27,370	28,144	23,147	25,817	26,899	27,121
H.C. 3	57,997	57,513	60,922	64,109	7,930	7,396	7,792	8,957	23,005	23,247	23,804	25,232
H.C. 4	54,787	52,129	55,272	61,916	13,623	15,941	18,586	18,681	23,023	24,569	23,655	23,471
H.C. 5	39,444	37,781	40,423	42,051	11,586	10,871	11,083	11,722	13,740	16,597	16,599	16,768
H.C. 6	216,951	209,926	230,646	229,825	101,702	101,724	103,246	106,003	85,610	80,845	78,423	75,484
Piedmont Total	***477,037***	***468,092***	***512,767***	***529,237***	***169,599***	***173,584***	***179,377***	***184,672***	***179,792***	***184,263***	***180,580***	***179,170***
H.C. 7	187,067	180,174	204,019	200,265	49,473	50,015	52,708	50,991	61,354	60,575	60,297	54,561
H.C. 8	138,086	145,114	174,411	172,379	25,231	33,847	35,662	32,652	73,027	69,925	67,850	63,866
Veneto Total	***325,153***	***325,288***	***378,430***	***372,644***	***74,704***	***83,862***	***88,370***	***83,643***	***134,381***	***130,500***	***128,147***	***118,427***
H.C. 9	84,489	90,865	87,417	93,791	33,109	32,150	28,767	30,919	43,662	44,653	43,155	38,961
H.C. 10	50,255	50,863	51,117	54,159	29,981	31,524	33,050	33,881	31,615	30,713	28,118	29,236
H.C. 11	53,030	54,987	58,822	60,574	27,338	24,647	22,514	22,421	31,037	31,950	30,996	27,073
H.C. 12	127,769	135,059	174,518	164,324	63,806	64,955	66,361	73,311	56,997	53,019	51,089	57,562
H.C. 13	58,801	60,468	69,659	66,769	25,625	27,719	27,564	26,997	46,737	47,169	46,543	44,684
Emilia Romagna Total	***374,344***	***392,242***	***441,533***	***439,617***	***179,859***	***180,995***	***178,256***	***187,529***	***210,048***	***207,504***	***199,901***	***197,516***
NORTH ITALY TOTAL	**1,176,534**	**1,185,622**	**1,332,730**	**1,341,498**	**424,162**	**438,441**	**446,003**	**455,844**	**524,221**	**522,267**	**508,628**	**495,113**
H.C. 14	52,925	54,593	57,104	58,368	8,513	7,842	7,810	6,910	23,821	23,028	23,162	22,406
H.C. 15	105,185	108,958	122,782	120,650	24,215	24,579	24,501	25,253	24,412	24,831	23,369	23,471
Marche Total	***158,110***	***163,551***	***179,886***	***179,018***	***32,728***	***32,421***	***32,311***	***32,163***	***48,233***	***47,859***	***46,531***	***45,877***
H.C. 16	85,856	86,638	84,898	81,706	31,789	32,422	30,508	29,617	46,153	45,364	41,604	35,671
H.C. 17	39,491	38,729	43,674	45,850	21,580	16,425	18,141	19,175	27,622	28,036	30,036	28,705
H.C. 18	173,123	170,228	181,357	177,454	90,061	88,202	89,358	91,632	60,866	69,566	65,115	70,198
H.C. 19	57,720	62,116	60,353	62,234	17,516	16,908	18,093	16,353	31,187	33,210	32,955	25,706
H.C. 20	101,041	106,257	104,687	97,605	53,220	52,839	51,995	47,345	35,443	34,869	32,777	33,014
Lazio Total	***457,231***	***463,968***	***474,969***	***464,849***	***214,166***	***206,796***	***208,095***	***204,122***	***201,271***	***211,045***	***202,487***	***193,294***
CENTRAL ITALY TOTAL	**615,341**	**627,519**	**654,855**	**643,867**	**246,894**	**239,217**	**240,406**	**236,285**	**249,504**	**258,904**	**249,018**	**239,171**

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(Continued) Table App. 1 – Comparison of 2013 to 2016 data for costs and revenues of Hospital Centers as per the Income Statement (revenues and costs in thousands of euros)

Hospital Centers	***Cost for the Purchase of Goods (Cod. BA010)***				***Cost for the Purchase of Healthcare Services (Cod. BA400)***				***Cost for the Purchase of Non-Healthcare Services (Cod. BA1570)***			
	2013	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***
H.C. 21	156,332	152,227	175,965	152,259	23,647	30,785	11,407	11,198	60,482	56,000	55,787	53,795
H.C. 22	72,117	78,259	82,473	74,060	8,244	7,896	7,347	7,608	27,514	27,751	27,667	26,114
Apulia Total	***228,449***	***230,486***	***258,438***	***226,319***	***31,891***	***38,681***	***18,754***	***18,806***	***87,996***	***83,751***	***83,454***	***79,909***
H.C. 23	38,241	37,379	40,174	41,988	2,448	1,637	2,341	1,660	25,278	25,728	26,232	27,362
H.C. 24	34,905	32,756	37,857	36,442	3,234	3,289	3,732	3,625	21,459	21,752	21,978	22,155
H.C. 25	23,373	22,286	22,540	23,150	3,580	3,218	3,320	3,410	6,456	7,248	7,150	6,988
H.C. 26	36,966	39,966	39,705	41,773	3,754	3,171	3,094	3,369	15,331	16,676	15,726	16,056
Calabria Total	***133,485***	***132,387***	***140,276***	***143,353***	***13,016***	***11,315***	***12,487***	***12,064***	***68,524***	***71,404***	***71,086***	***72,561***
H.C. 27	44,129	44,904	47,546	50,062	11,369	11,300	9,008	10,837	20,725	21,458	21,345	21,339
H.C. 28	53,451	56,307	68,120	69,107	13,072	12,053	13,814	22,820	18,513	17,457	16,890	16,472
H.C. 29	111,358	116,388	139,112	139,517	25,078	24,454	27,958	31,243	33,399	28,315	26,611	27,696
H.C. 30	30,986	32,779	35,358	35,998	3,711	2,988	4,395	5,214	15,660	14,171	12,865	13,256
H.C. 31	41,608	43,988	58,936	57,888	5,010	5,340	9,310	17,381	23,750	20,430	18,338	18,865
H.C. 32	69,449	73,519	81,139	78,493	6,661	4,694	8,746	15,954	25,246	24,549	24,050	24,766
H.C. 33	73,644	76,283	75,215	80,939	18,703	23,259	25,488	34,703	28,871	24,950	23,617	19,254
H.C. 34	56,170	62,848	83,827	87,994	25,486	27,415	32,689	46,433	14,454	13,067	14,543	15,451
Sicily Total	***480,795***	***507,016***	***589,253***	***599,998***	***109,090***	***111,503***	***131,408***	***184,585***	***180,618***	***164,397***	***158,259***	***157,099***
SOUTH ITALY TOTAL	**842,729**	**869,889**	**987,967**	**969,670**	**153,997**	**161,499**	**162,649**	**215,455**	**337,138**	**319,552**	**312,799**	**309,569**
OVERALL TOTAL	**2,634,604**	**2,683,030**	**2,975,552**	**2,955,035**	**825,053**	**839,157**	**849,058**	**907,584**	**1,110,863**	**1,100,723**	**1,070,445**	**1,043,853**

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(Continued) Table App. 1 – Comparison of 2013 to 2016 data for costs and revenues of Hospital Centers as per the Income Statement (revenues and costs in thousands of euros)

Hospital Centers	***Personnel costs (Cod. BA2080)***				***Deferred costs (Cod. BA2690)***				***Other costs***			
	2013	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***
H.C. 1	68,257	68,937	68,500	68,242	2,269	306	350	472	12,496	13,737	12,778	12,364
H.C. 2	124,016	124,323	130,325	131,059	3,546	593	1,906	300	27,386	29,034	31,471	35,024
H.C. 3	116,907	116,958	118,070	117,977	1,720	142	169	849	19,714	21,326	19,183	18,677
H.C. 4	110,019	108,828	112,093	113,350	2,657	645	1,486	1,301	17,802	20,270	20,692	18,207
H.C. 5	92,680	91,428	91,455	91,255	1,740	679	2,129	1,958	11,859	12,240	15,337	14,994
H.C. 6	473,756	473,869	476,016	469,123	15,198	13,853	12,236	15,124	96,131	102,725	97,144	100,211
Piedmont Total	***985,635***	***984,343***	***996,459***	***991,006***	***27,130***	***16,218***	***18,276***	***20,004***	***185,388***	***199,332***	***196,605***	***199,477***
H.C. 7	207,052	203,814	208,069	209,295	21,015	18,020	10,763	12,781	49,272	48,701	44,127	47,067
A,O, 8	228,240	220,412	219,722	222,050	5,562	4,741	7,694	17,586	46,983	40,507	51,113	62,519
Veneto Total	***435,292***	***424,226***	***427,791***	***431,345***	***26,577***	***22,761***	***18,457***	***30,367***	***96,255***	***89,208***	***95,240***	***109,586***
H.C. 9	167,899	167,288	169,137	170,411	3,289	2,622	5,180	8,489	34,991	33,108	41,777	33,117
H.C. 10	135,756	137,952	139,162	140,046	2,329	4,385	433	6,073	25,980	24,047	29,394	24,417
H.C. 11	109,604	110,715	111,171	111,411	6,338	3,325	5,346	10,407	28,054	27,688	27,849	26,551
H.C. 12	226,774	222,428	217,790	215,994	17,485	28,078	21,082	11,648	51,550	44,258	44,496	49,141
H.C. 13	126,695	124,263	123,733	12,203	3,124	2,587	4,539	4,935	36,176	35,851	34,924	145,503
Emilia Romagna Total	***766,728***	***762,646***	***760,993***	***650,065***	***32,565***	***40,997***	***36,580***	***41,552***	***176,751***	***164,952***	***178,440***	***278,729***
NORTH ITALY TOTAL	**2,187,655**	**2,171,215**	**2,185,243**	**2,072,416**	**86,272**	**79,976**	**73,313**	**91,923**	**458,394**	**453,492**	**470,285**	**587,792**
H.C. 14	102,663	102,813	100,746	101,551	6,110	7,983	7,494	9,630	18,921	16,099	15,872	16,531
H.C. 15	162,827	161,704	159,555	161,828	11,254	11,352	9,009	8,415	32,348	34,060	32,214	32,668
Marche Total	***265,490***	***264,517***	***260,301***	***263,379***	***17,364***	***19,335***	***16,503***	***18,045***	***51,269***	***50,159***	***48,086***	***49,199***
H.C. 16	242,361	236,001	232,783	231,558	9,610	10,873	7,486	16,580	51,736	55,086	45,879	35,736
H.C. 17	127,590	123,966	122,989	123,684	6,114	10,544	17,863	6,455	19,732	18,738	25,164	23,452
H.C. 18	119,291	116,237	123,581	142,486	45,178	46,443	37,404	40,816	49,267	36,285	36,248	38,939
H.C. 19	89,239	89,507	90,359	90,553	3,226	6,720	6,462	7,483	24,441	17,057	18,971	17,740
H.C. 20	52,179	51,521	51,892	55,048	2,841	7,109	9,830	10,640	27,128	29,853	25,912	24,228
Lazio Total	***630,660***	***617,232***	***621,604***	***643,329***	***66,969***	***81,689***	***79,045***	***81,974***	***172,304***	***157,019***	***152,174***	***140,095***
CENTRAL ITALY TOTAL	**896,150**	**881,749**	**881,905**	**906,708**	**84,333**	**101,024**	**95,548**	**100,019**	**223,573**	**207,178**	**200,260**	**189,294**

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(Continued) Table App. 1 – Comparison of 2013 to 2016 data for costs and revenues of Hospital Centers as per the Income Statement (revenues and costs in thousands of euros)

Hospital Centers	***Personnel costs (Cod. BA2080)***				***Deferred costs (Cod. BA2690)***				***Other costs***			
	2013	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***
H.C. 21	193,950	193,159	197,474	194,126	8,913	14,375	2,014	3,099	31,081	32,252	49,210	59,231
H.C. 22	108,565	108,993	109,989	111,581	3,154	5,518	4,876	3,753	16,301	12,694	13,016	14,808
Apulia Total	***302,515***	***302,152***	***307,463***	***305,707***	***12,067***	***19,893***	***6,890***	***6,852***	***47,382***	***44,946***	***62,226***	***74,039***
H.C. 23	104,152	102,133	101,131	100,768	3,424	6,403	6,873	4,096	7,902	10,638	12,125	13,198
H.C. 24	93,112	91,855	92,167	92,110	1,424	1,250	1,289	1,315	10,377	11,192	11,624	10,395
H.C. 25	32,346	32,281	32,455	32,015	3,249	2,280	2,295	2,850	3,838	6,565	11,427	19,999
H.C. 26	83,682	82,873	81,080	83,613	3,270	2,943	3,314	2,545	14,660	15,267	15,611	16,114
Calabria Total	***313,292***	***309,142***	***306,833***	***308,506***	***11,367***	***12,876***	***13,771***	***10,806***	***36,777***	***43,662***	***50,787***	***59,706***
H.C. 27	83,756	83,149	83,514	82,904	6,201	9,047	8,994	15,268	13,424	13,711	17,589	14,982
H.C. 28	114,212	113,964	113,706	114,625	8,374	10,758	10,026	10,218	19,765	16,074	16,137	15,791
H.C. 29	155,086	151,990	149,678	149,251	8,345	12,851	17,167	18,468	36,705	41,571	32,685	23,505
H.C. 30	98,062	96,926	92,886	86,392	3,398	11,283	10,825	17,986	15,995	25,401	19,154	20,181
H.C. 31	87,486	87,751	89,983	90,339	6,655	8,131	6,010	8,835	12,461	14,140	8,742	10,031
H.C. 32	145,249	140,907	141,391	140,780	7,167	8,714	12,737	8,353	19,306	22,491	14,986	16,048
H.C. 33	164,280	161,480	158,094	154,749	12,269	18,689	23,436	31,623	23,161	29,586	31,047	26,960
H.C. 34	61,164	60,096	61,179	62,852	4,947	3,277	3,708	4,269	30,612	34,926	27,875	29,031
Sicily Total	***909,295***	***896,263***	***890,431***	***881,892***	***57,356***	***82,750***	***92,903***	***115,020***	***171,429***	***197,900***	***168,215***	***156,529***
SOUTH ITALY TOTAL	**1,525,102**	**1,507,557**	**1,504,727**	**1,496,105**	**80,790**	**115,519**	**113,564**	**132,678**	**255,588**	**286,508**	**281,228**	**290,274**
OVERALL TOTAL	**4,608,907**	**4,560,521**	**4,571,875**	**4,475,229**	**251,395**	**296,519**	**282,425**	**324,620**	**937,555**	**947,178**	**951,773**	**1,067,360**

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(Continued) Table App. 1 – Comparison of 2013 to 2016 data for costs and revenues of Hospital Centers as per the Income Statement (revenues and costs in thousands of euros)

Hospital Centers	***Total costs***				***Operating Results***			
	2013	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***
H.C. 1	152,789	153,351	155,550	158,578	0	-10,147	0	0
H.C. 2	262,211	270,979	292,053	297,743	-5,990	-12,852	-18,864	-6,428
H.C. 3	227,273	226,582	229,940	235,801	0	-5,619	0	**1,713**
H.C. 4	221,911	222,382	231,784	236,926	0	-5,737	-4,486	**2,403**
H.C. 5	171,049	169,596	177,026	178,748	0	-8,432	-6,568	**1,801**
H.C. 6	989,348	982,942	997,711	995,770	-12,750	-30,648	-15,081	0
Piedmont Total	***2,024,581***	***2,025,832***	***2,084,064***	***2,103,566***	***-18,740***	***-73,435***	***-44,999***	***-511***
H.C. 7	575,233	561,299	579,983	574,960	-25,609	-22,835	-17,047	-10,491
H.C. 8	517,129	514,546	556,452	571,052	-24,950	-13,451	**1,000**	**490**
Veneto Total	***1,092,362***	***1,075,845***	***1,136,435***	***1,146,012***	***-50,559***	***-36,286***	***-16,047***	***-10,001***
H.C. 9	367,439	370,686	375,433	375,688	0	0	0	0
H.C. 10	275,916	279,484	281,274	287,812	0	0		0
H.C. 11	255,401	253,312	256,698	258,437	0	0	0	0
H.C. 12	544,381	547,797	575,336	571,980	0	0	0	0
H.C. 13	297,158	298,057	306,962	301,091	0	0	0	0
Emilia Romagna Total	***1,740,295***	***1,749,336***	***1,795,703***	***1,795,008***	***0***	***0***	***0***	***0***
NORTH ITALY TOTAL	**4,857,238**	**4,851,013**	**5,016,202**	**5,044,586**	**-69,299**	**-109,721**	**-61,046**	**-10,512**
H.C. 14	212,953	212,358	212,188	215,396	0	0	0	0
H.C. 15	360,241	365,484	371,430	372,285	0	0	0	**2,582**
Marche Total	***573,194***	***577,842***	***583,618***	***587,681***	***0***	***0***	***0***	***2,582***
H.C. 16	467,505	466,384	443,158	430,868	-151,274	-158,632	-161,799	-155,718
H.C. 17	242,129	236,438	257,867	247,321	-91,594	-102,291	-98,853	-81,733
H.C. 18	537,786	526,961	533,063	561,525	-77,273	-74,610	-92,543	-140,252
H.C. 19	223,329	225,518	227,193	220,069	-102,291	-53,708	-54,160	-49,108
H.C. 20	271,852	282,448	277,093	267,880	-55,349	-73,601	-62,567	-41,794
Lazio Total	***1,742,601***	***1,737,749***	***1,738,374***	***1,727,663***	***-477,781***	***-462,842***	***-469,922***	***-468,605***
CENTRAL ITALY TOTAL	**2,315,795**	**2,315,591**	**2,321,992**	**2,315,344**	**-477,781**	**-462,842**	**-469,922**	**-466,023**

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(Continued) Table App. 1 – Comparison of 2013 to 2016 data for costs and revenues of Hospital Centers as per the Income Statement (revenues and costs in thousands of euros)

Hospital Centers	***Total costs***				***Operating Results***			
	2013	***2014***	***2015***	***2016***	***2013***	***2014***	***2015***	***2016***
H.C. 21	474,405	478,798	491,857	473,708	0	0	-28,102	-19,736
H.C. 22	235,895	241,111	245,368	237,924	0	0	0	0
Apulia Total	***710,300***	***719,909***	***737,225***	***711,632***	***0***	***0***	***-28,102***	***-19,736***
H.C. 23	181,445	183,918	188,876	189,072	-4,584	-6,007	-1,880	0
H.C. 24	164,511	162,094	168,647	166,042	-1,682	-3,764	-2,265	0
H.C. 25	72,842	73,878	79,187	88,412	-15,516	-14,562	-29,858	-42,000
H.C. 26	157,663	160,896	158,530	163,470	0	0	0	0
Calabria Total	***576,461***	***580,786***	***595,240***	***606,996***	***-21,782***	***-24,333***	***-34,003***	***-42,000***
H.C. 27	179,604	183,569	187,996	195,392	0	0	0	0
H.C. 28	227,387	226,613	238,693	249,033	0	0	0	0
H.C. 29	369,971	375,569	393,211	389,680	0	788	0	0
H.C. 30	167,812	183,548	175,483	179,027	0	0	0	0
H.C. 31	176,970	179,780	191,319	203,339	0	0	0	0
H.C. 32	273,078	274,874	283,049	284,394	0	2,456	2,680	0
H.C. 33	320,928	334,247	336,897	348,228	0	0	0	0
H.C. 34	192,833	201,629	223,821	246,030	0	2209	0	1120
Sicily Total	***1,908,583***	***1,959,829***	***2,030,469***	***2,095,123***	***0***	***5,453***	***2,680***	***1,120***
SOUTH ITALY TOTAL	**3,195,344**	**3,260,524**	**3,362,934**	**3,413,751**	**-21,782**	**-18,880**	**-59,425**	**-60,616**
OVERALL TOTAL	**10,368,377**	**10,427,128**	**10,701,128**	**10,773,681**	**-568,862**	**-591,443**	**-590,393**	**-537,151**

Source: *Reports of the financial statements of the individual Hospital Centers for the four years indicated*

Table App. 2 – Revenues exceeding the limit of 30% for "by function" activities, calculated as per the Ministerial Decree, starting from the value present in the 2016 Income Statements, as well as the operating results for the same year, for the Hospital Centers considered (A.V. in thousands of euros)

HOSPITAL CENTERS	H.C. WITH "BY FUNCTION" ACTIVITIES THAT EXCEED 30% (IN BOLD)	% IN EXCESS OF 30%	EQUIVALENT IN THOUSANDS OF EURO, AS PER 2016 I.S.	EQUIVALENT IN THOUSANDS OF EUROS CALCULATED ON THE BASIS OF 30% LIMIT FOR "BY FUNCTION" ACTIVITIES	DIFFERENCE IN THOUSANDS OF EURO (E = D - C)	H.C. OPERATING RESULTS	ALGEBRAIC SUM G = E + F
	A	B	C	D	E	F	G
H.C. 1	26.9		-			0	0
H.C. 2	**31.1**	1.1	89,816	85,315	- 4,501	- 6,428	- 10,929
H.C. 3	22.6		-			**1,713**	1,713
H.C. 4	**30.4**	0.4	72,369	70,997	- 1,372	**2,403**	1,031
H.C. 5	28.8		-			**1,801**	1,801
H.C. 6	**40.1**	10.1	369,228	236,681	- 132,547	0	- 132,547
Piedmont Total	***33.6***	***3.6***	***531,413***	***392,993***	***- 138,420***	**- 511**	**- 138,931**
H.C. 7	27.9		-	-		- 10,491	- 10,491
H.C. 8	21.2		-			**490**	490
Veneto Total	***24.6***					***- 10,001***	**- 10,001**
H.C. 9	15.7				-	0	0
H.C. 10	12.6			-	-	0	0
H.C. 11	17.7				-	0	0
H.C. 12	16.9				-	0	0
H.C. 13	29.0				-	0	0
Emilia Romagna Total	***18.1***				**-**		0
NORTH ITALY TOTAL	**26.0**		**531,413**	**392,993**	**- 138,420**	***- 10,512***	**- 148,932**
H.C. 14	**32.7**	2.7	**72,419**	63,838	- 8,581	0	- 8,581
H.C. 15	25.5		**0**	-	-	**2,582**	2,582
Marche Total	***28.2***		***72,419***	***63,838***	***- 8,581***	***2,582***	***- 5,999***
H.C. 16	16.8		-			- 155,718	- 155,718
H.C. 17	11.7		-			- 81,733	- 81,733
H.C. 18	20.0		-	-		- 140,252	- 140,252
H.C. 19	11.6		-			- 49,108	- 49,108
H.C. 20	14.6		-			- 41,794	- 41,794
Lazio Total	***16.2***				**-**	***- 468,605***	***- 468,605***
CENTRAL ITALY TOTAL	**20.1**		**72,419**	**63,838**	**- 8,581**	***- 466,023***	**- 474,604**

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(Continued) *Table App. 2 – Revenues exceeding the limit of 30% for "by function" activities, calculated as per the Ministerial Decree, starting from the value present in the 2016 Income Statements, as well as the operating results for the same year, for the Hospital Centers considered (A.V. in thousands of euros)*

HOSPITAL CENTERS	H.C. WITH "BY FUNCTION" ACTIVITIES THAT EXCEED 30% (IN BOLD)	% IN EXCESS OF 30%	EQUIVALENT IN THOUSANDS OF EURO, AS PER 2016 I.S.	EQUIVALENT IN THOUSANDS OF EUROS CALCULATED ON THE BASIS OF 30% LIMIT FOR "BY FUNCTION" ACTIVITIES	DIFFERENCE IN THOUSANDS OF EURO (E = D - C)	H.C. OPERATING RESULTS	ALGEBRAIC SUM G = E + F
	A	B	C	D	E	F	G
H.C. 21	**33.9**	3.9	**155,241**	129,738	- 25,503	- 19,736	- 45,239
H.C. 22	**30.7**	0.7	**73,154**	70,812	- 2,342	0	- 2,342
Apulia Total	***32.8***	***2.8***	***228,395***	***200,550***	***- 27,845***	***- 19,736***	***- 47,581***
H.C. 23	**35.7**	5.7	**66,398**	51,176	- 15,222	0	- 15,222
H.C. 24	**38.5**	8.5	67,599	46,290	- 21,309	-	- 21,309
H.C. 25	6.6		-			- 42,000	- 42,000
H.C. 26	**36.0**	6.0	56,000	42,644	- 13,356	0	- 13,356
Calabria Total	***34.3***	***4.3***	***189,997***	***140,110***	***-49,887***	***- 42,000***	***- 91,887***
H.C. 27	**35.6**	5.6	67,685	52,472	- 15,213	0	- 15,213
H.C. 28	29.5		-			0	0
H.C. 29	**36.5**	6.5	142,094	105,861	- 36,233	0	- 36,233
H.C. 30	**45.8**	15.8	79,646	40,369	- 39,277	0	- 39,277
H.C. 31	26.8		-	-		0	0
H.C. 32	**38.3**	8.3	109,141	75,342	- 33,799	0	- 33,799
H.C. 33	**46.3**	16.3	149,380	74,279	- 75,101	0	- 75,101
H.C. 34	**32.0**	2.0	79,042	72,076	- 6,966	1120	- 5,846
Sicily Total	***36.6***	***6.6***	***626,988***	***420,399***	***-206,589***	***1,120***	***- 205,469***
SOUTH ITALY TOTAL	**35.4**	**5.4**	**1,045,380**	**761,059**	**-284,321**	***- 60,616***	**- 344,937**
OVERALL TOTAL	**28.0**		**1,649,212**	**1,217,890**	**-431,322**	**- 537,151**	**- 968,473**

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

The second method used was based on two situational surveys, concerning the relationships between users/citizens and hospital services and the experiences of caregivers on some topics specific to 2017, respectively.

The first survey was in the form of a questionnaire given to a nationally representative sample of Italian adults 18 years and older. The survey included a set of questions – as every year – designed to measure differences in opinions and assessments of the actual users of the services, on one hand, and of citizens, on the other hand.

The key issues regarding access to hospital services and their perceived quality, as well as the overall evaluation of the mixed public/accredited private hospital system typical of the Italian country, taking into account the different types of facilities (public and accredited private facilities, and private clinics).

To this end, the usual questionnaire was developed which included:

a) questions directed at users of hospital services in the last twelve months, specific to:
   - the type of hospital service used;
   - the type of hospital visited (public, accredited private, or private clinic);
   - the level of satisfaction with the services received the last time any of these facilities were visited;
   - the manner in which the respondent made his/her decision to make use of the hospital facility most recently visited;
   - the level of the respondent's 'loyalty' to the most recent facility visited.
b) and some questions were instead addressed to the entire survey sample of citizens 18 years and older.

   These questions pertained to information including:
   - whether or not hospital services had been accessed in the last twelve months by the interviewee and/or members of his/her family;
   - the level of awareness regarding the ability to access both public and accredited private hospitals for which there are no charges for patients;
   - the ability to choose hospitals outside the Region in which the respondent resides;
   - awareness of the new legislation that beginning in October 2013 allows patients to seek healthcare and hospital services from facilities of other EU countries under coverage of the Italian Health Service (even if said opportunity remains subject to prior authorization from the local healthcare authorities and the advance payment of expenses by the patient, subsequently reimbursed);

- the inclination of the respondent to make use of facilities other than those located in their town, province, Region, or even, Italy, in the event of the need for serious health reasons (to this was added a question regarding the theoretical behavior of citizens in the event of serious and/or urgent health problems, in order to verify the increasing use of hospital facilities compared to local medical services);
- the levels of satisfaction regarding Italian hospitals, divided by the three types: public hospitals, accredited private hospitals and private clinics);
- opinions on some statements with a view to keeping the current mixed public/accredited private healthcare system as an integrated service provider and how more precise information might be provided to users;
- the willingness of the respondent to ideally take on some additional costs in order to have more choices than are currently available.

The survey was conducted from September to October 2017 and resulted in 4,020 valid questionnaires being collected through a special electronic panel made up of 2,000 Italian households, whose individual members aged 18 and older responded to the questions on the questionnaire mentioned above.

The above panel is maintenanced constantly (annually) in order to compensate for any lack of functional collaboration by part of the respondents, and to ensure the ongoing representative nature of the survey sample used (such maintenance affecting approximately 15% of the total survey sample each year).

The data collected from the survey were then reassembled in such a manner so as to render them completely useful as an ideal sample of the Italian adult population 18 years and older as a whole.

The survey sample's level of error is approximately ±1.55%, with a confidence interval of 95%.

Subsequently, the information thus collected was processed in order to obtain simple distribution tables, which were then used to make some cross-checks of variable groups considered particularly significant, as shown in Section 3 of the Appendices.

The overall results of the survey and comments relating to it are found in Part Two of the Report.

The social-personal profiles for the 4,020 respondents are given in the tables below. They illustrate the basic characteristics of the samples used in the situation surveys conducted annually.

Table App. 3 – Gender of the respondents (%)

Gender	*2017*	*2016*	*2015*	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*
– Male	47.7	47.7	47.7	47.7	47.7	48.0	48.0	48.0	48.0	48.0	48.0	47.8	47.8
– Female	52.3	52.3	52.3	52.3	52.3	52.0	52.0	52.0	52.0	52.0	52.0	52.2	52.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
A.V.	4,020	4,020	4,020	4,020	4,020	4,070	4,070	4,110	4,140	4,210	4,160	4,350	4,011

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 4 – Position occupied in the family by the respondent (%)

Role	*%*
– Head of household	42.9
– Not head of household	57.1
Total	100.0
A.V.	4,020

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 5 – Number of family members (%)

Number	*%*
– 1 member	4.2
– 2 members	24.7
– 3 members	31.1
– 4 members	29.1
– 5 or more members	10.9
Total	100.0
A.V.	4,020

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 6 – Age of the respondents (%)

Age range	*2017*	*2016*	*2015*	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*
– 18-24 years	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.7	8.7	8.7	9.0	9.9	9.9
– 25-34 years	14.3	14.3	14.3	14.3	14.3	15.4	15.4	15.9	16.3	16.7	17.7	18.6	18.6
– 35-54 years	36.9	36.9	36.9	37.0	37.0	36.9	36.9	36.6	36.3	36.0	35.4	34.5	34.5
– ≥ 55 years	40.2	40.2	40.1	40.1	40.1	39.1	39.1	38.8	38.7	38.6	37.9	37.0	37.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
A.V.	4,020	4,020	4,020	4,020	4,020	4,070	4,070	4,110	4,140	4,210	4,160	4,350	4,011

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 7 – Distribution of respondents by residence (%)

Distribution	*2017*	*2016*	*2015*	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*
– North-West	26.7	26.7	26.7	26.7	26.7	26.8	26.8	26.8	26.9	26.9	26.9	26.7	26.9
– North-East	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.2	19.2	19.2	19.2	19.1
– Center	18.1	19.1	18.1	18.2	18.2	18.1	18.0	18.4	18.6	18.6	17.9	17.6	17.6
– South and Islands	35.9	34.9	35.9	35.8	35.8	35.8	35.9	35.5	35.3	35.3	36.0	36.5	36.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
A.V.	4,020	4,020	4,020	4,020	4,020	4,070	4,070	4,110	4,140	4,210	4,160	4,350	4,011

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 8 – Distribution of respondents by size of town of residence (%)

Size	*2017*	*2016*	*2015*	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*
– Up to 20,000 inhabitants	47.6	47.6	47.6	47.6	47.6	46.9	46.9	47.0	47.2	47.2	47.4	47.8	47.8
– 20,001 to 100,000 inhabitants	29.2	29.2	29.2	29.2	29.2	29.7	39.7	29.5	29.2	29.4	29.1	28.4	28.4
– 100,001 inhabitants and more	23.2	23.2	23.2	23.2	23.2	23.4	23.4	23.5	23.6	23.4	23.5	23.8	23.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
A.V.	4,020	4,020	4,020	4,020	4,020	4,070	4,070	4,110	4,140	4,210	4,160	4,350	4,011

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 9 – Occupational activity of the respondents (%)

Occupational Activity	*2017*	*2016*	*2015*	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*
– Self-employed	11.4	11.4	11.4	11.4	11.4	11.5	11.6	12.0	12.4	12.2	12.6	12.6	12.6
– Employed	18.8	18.9	18.9	18.9	18.9	18.5	18.5	18.8	19.0	18.6	18.1	18.2	33.8
– Laborer	15.4	15.4	15.4	15.4	15.4	16.2	16.2	16.4	15.9	15.7	15.6	15.6	-
– Housewife/Pensioner	40.0	40.0	40.0	40.0	40.0	41.0	40.9	39.8	40.0	40.6	38.6	38.7	38.7
– Job seekers	4.2	4.1	4.1	4.1	4.1	3.8	3.8	3.3	3.0	2.9	6.1	6.1	6.1
– Other	10.2	10.2	10.2	10.2	10.2	9.0	9.0	9.7	9.7	10.0	9.0	8.8	8.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
A.V.	4,020	4,020	4,020	4,020	4,020	4,070	4,070	4,110	4,140	4,210	4,160	4,350	4,011

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 10 – Education of the respondents (%)

Qualification	*2017*	*2016*	*2015*	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*
– No qualifications/Primary school	23.2	23.2	23.2	23.2	23.2	24.9	24.9	25.8	26.8	27.8	28.6	28.0	28.0
– Lower secondary school certificate	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.4	35.0	34.6	34.5	36.3	36.3
– Higher secondary school certificate/First cycle degree, Second cycle degree, Third cycle degree	41.3	41.3	41.3	41.3	41.3	39.6	39.6	38.8	38.2	37.6	36.9	35.7	35.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
A.V.	4,020	4,020	4,020	4,020	4,020	4,070	4,070	4,110	4,140	4,210	4,160	4,350	4,011

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 11 – Estimated socioeconomic status of the respondents (%)

Status	*2017*	*2016*	*2015*	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*
– Low/Low-Middle	50.3	47.2	47.5	49.3	49.5	50.3	50.2	48.7	50.8	47.4	45.8	42.8	44.8
– Middle	44.5	48.3	37.4	27.3	27.3	25.5	25.9	26.6	24.4	20.1	20.4	21.1	20.3
– Middle-High/High	5.2	4.5	15.1	23.4	23.2	24.2	23.9	24.7	24.8	32.5	33.8	36.1	34.9
Total	100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
A.V.	4,020	4,020	4,020	4,020	4,020	4,070	4,070	4,110	4,097	4,210	4,160	4,350	4,011

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

The second survey carried out for this Report was that devoted specifically to caregivers. It has been aimed in particular at examining the out-of-pocket spending by Italian households, to which the measurement has been added (for the last twelve months) any foregoing and/or possible postponement of treatment and the weaknesses of the "connection systems", as well as the consequent reactions by the caregivers. To this end a further ad hoc questionnaire was created to be given to a representative national sample of the aforementioned caregivers. The questions in this questionnaire related more specifically to:

- exploring the out-of-pocket expenses incurred by families and related spending behavior in more detail;
- the measurement of the phenomenon relating to any postponement and/or foregoing of treatment in 2017, but also in 2016 and 2015;
- an assessment of the permanent weakness of the "connection systems": at the time of entry to hospital facilities, during the stay in the latter and upon discharge, perhaps to go to rehabilitation and/or assistance facilities;
- the "compensatory" action taken, with respect to the dissatisfaction that may have been previously reported for public hospitals, through the use of accredited private hospitals and/or private clinics;
- and verification of the orientation towards extra-regional hospital facilities.

This questionnaire was given in September/October 2017, and resulted in the collection of 1,847 valid responses. Again in this case the telematic panel mentioned for the previous survey was used, from which replies were received from a national representative sample after a slight weighting, which is illustrated by the chart on the following page which compares the distribution of the "raw" respondents with that of the "weighted" respondents.

The caregiver survey sample's level of error is approximately ± 2.28%, with a confidence interval of 95%.

The information collected was processed so as to attain simple distribution Tables, on the basis of which a series of cross-checks were made, using several particularly significant variables that are described in below in Section 4 of the Appendices.

The results of the survey and the relative comments are located in Part Three of this Report.

The social-personal profiles of the 2,000 caregivers interviewed are provided in the Tables below. These describe the characteristics of the sample used for the survey.

	Raw respondents (2017)		*Weighted respondents (2017)*	
	Freq.	*%*	*Freq.*	*%*
GENDER				
Male	808	43.7	844	42.2
Female	1,039	56.3	1,156	57.8
Total	1,847	100.0	2,000	100.00
NIELSEN REGION				
Piedmont+Liguria+Aosta Valley	198	10.7	224	11.2
Lombardy	354	19.2	338	16.9
Triveneto	209	11.3	240	12.0
Emilia Romagna	120	6.5	156	7.8
Tuscany+Marche+Umbria+Sardinia	258	14.0	264	13.2
Lazio	140	7.6	190	9.5
Abruzzo+Molise+Campania+Apulia	322	17.4	344	17.2
Sicily+Calabria+Basilicata	246	13.3	242	12.1
Total	1,847	100.0	2,000	100.00
QUALIFICATION				
No qualifications/Primary school	24	1.3	146	7.30
Lower secondary school certificate	224	12.1	360	18.00
Higher secondary school certificate	1,071	58.0	988	49.40
First cycle degree, Second cycle degree, Third cycle degree	528	28.6	506	25.30
Total	1,847	100.0	2,000	100.00
AGE RANGES				
18-24 years	62	3.4	16	0.80
25-34 years	202	10.9	194	9.70
35-44 years	400	21.7	486	24.30
45-54 years	544	29.5	428	21.40
55-64 years	351	19.0	392	19.60
≥64 years	288	15.6	484	24.20
Total	1,847	100.0	2,000	100.00
OCCUPATIONAL ACTIVITY				
Self-employed	251	13.6	251	12.54
Employed	725	39.3	695	34.77
Laborer	171	9.3	172	8.58
Housewife	187	10.1	215	10.75
Pensioner	308	16.7	488	24.39
Job seekers	65	3.5	68	3.41
Other	140	7.6	111	5.55
Total	1,847	100.0	2,000	100.00
ROLE				
Head of household	980	53.1	1,318	65.90
Not head of household	867	46.9	682	34.10
Total	1,847	100.0	2,000	100.00
SOCIO ECONOMIC STATUS				
AB (High)	14	0.8	15	0.74
C1 (Middle-High)	122	6.6	120	5.98
C2 (Middle)	957	51.8	1,019	50.94
D (Low-Middle)	600	32.5	646	32.30
E (Low)	154	8.3	201	10.04
Total	1,847	100.0	2,000	100.00

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Table App. 12 – Position of the caregivers interviewed (%)

Response	*%*
– Wife (or female partner)	38.0
– Husband (or male partner)	35.6
– Sole family member (female)	6.9
– Sole family member (male)	3.3
– Daughter	7.6
– Son	2.5
– Co-habiting sister (of husband or wife)	0.2
– Co-habiting brother (of husband or wife)	0.1
– Other co-habiting relative (woman)	2.8
– Other co-habiting relative (man)	0.5
– Other person not related, but co-habiting (woman)	0.2
– Other person not related, but co-habiting (man)	0.4
– Other	1.9
Total	100.0
A.V.	2,000

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 13 – Position occupied in the family by the caregiver (%)

Role	*%*
– Head of household	65.9
– Not head of household	34.1
Total	100.0
A.V.	2,000

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 14 – Number of family members (%)

Number	*%*
– 1 member	9.3
– 2 members	32.0
– 3 members	29.0
– 4 members	23.0
– 5 or more members	6.7
Total	100.0
A.V.	2,000

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 15 – Gender of the caregiver (%)

Gender	*2017*	*2016*	*2015*	*2014*	*2013*
– Male	42.2	42.2	42.2	39.0	37.6
– Female	57.8	57.8	57.8	61.0	62.4
Total	100.0	100.0	100.0	100.0	100.0
A.V.	2,000	2,000	2,000	2,000	2,000

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

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Table App. 16 – Age of the caregivers (%)

Age range	*2017*	*2016*	*2015*	*2014*	*2013*
– 18-34 years	10.5	10.5	10.5	9.5	10.3
– 35-54 years	45.7	45.7	45.7	41.6	41.8
– ≥55 years	43.8	43.8	43.8	48.9	47.9
Total	100.0	100.0	100.0	100.0	100.0
A.V.	2,000	2,000	2,000	2,000	2,000

Source: *Survey Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 17 – Education of the caregivers (%)

Qualification	*2017*	*2016*	*2015*	*2014*	*2013*
– No qualifications/Primary school	7.3	7.3	7.3	5.0	5.6
– Lower secondary school certificate	18.0	18.0	18.0	27.6	26.9
– Higher secondary school certificate	49.4	49.4	49.4	46.8	47.3
– First cycle degree, Second cycle degree, Third cycle degree	25.3	25.3	25.3	20.6	20.2
Total	100.0	100.0	100.0	100.0	100.0
A.V.	2,000	2,000	2,000	2,000	2,000

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 18 – Occupational activity of the caregivers (%)

Occupational activity	*2017*	*2016*	*2015*	*2014*	*2013*
– Self-employed	5.2	5.2	14.7	11.7	11.6
– Employed	39.3	39.3	35.3	34.0	33.5
– Laborer	8.2	8.2	7.4	7.8	7.3
– Housewife	10.8	10.8	9.7	14.0	14.8
– Pensioner	25.2	25.2	22.7	26.5	26.6
– Job seekers	8.1	8.1	7.3	5.3	5.1
– Other	3.2	3.2	2.9	0.7	1.1
Total	100.0	100.0	100.0	100.0	100.0
A.V.	2,000	2,000	2,000	2,000	2,000

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 19 – Geographical distribution of caregivers (%)

Distribution	*2017*	*2016*	*2015*	*2014*	*2013*
– North-West	28.1	28.1	28.2	28.2	28.2
– North-East	19.8	19.8	19.8	19.8	19.8
– Center	19.1	20.2	19.4	18.7	18.8
– South and Islands	33.0	31.9	32.6	33.3	33.2
Total	100.0	100.0	100.0	100.0	100.0
A.V.	2,000	2,000	2,000	2,000	2,000

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

Table App. 20 – Distribution of caregivers by size of town of residence (%)

Size	*2017*	*2016*	*2015*	*2014*	*2013*
– Up to 20,000 habitants	47.0	47.0	47.0	47.0	47.0
– 20,001-100,000 habitants	28.5	28.5	28.5	28.5	28.5
– 100,001 habitants and more	24.5	24.5	24.5	24.5	24.5
Total	100.0	100.0	100.0	100.0	100.0
A.V.	2,000	2,000	2,000	2,000	2,000

Source: *Survey by Ermeneia – Studi & Strategie di Sistema, 2017*

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The detailed examination of the topic of out-of-pocket spending by Italian families for healthcare and assistance led to the comparing of the survey data with the data collected by ISTAT.

Table 1 of the aforementioned Part Three shows the public healthcare spending and the out-of-pocket spending of households at current prices, using the following ISTAT resident population data:

2006	59,131,287
2007	59,619,290
2008	60,045,068
2009	60,340,328
2010	60,626,442
2011 (pre-census)	60,785,753
2011 (post-census)	59,394,207
2012	59,685,227
2013	60,782,668
2014	60,795,612
2015	60,665,551
2016	60,589,445

Table 5D, contained in Part Three, was constructed as follows.

First of all, the data relating to healthcare spending, as per the annual ISTAT survey, taken from Table 1 of Part Three has been reported. This takes into account the EUR 35,681 million from 2016, broken down into:

- EUR 13,557 million for medicinal products + healthcare articles + therapeutic material;
- EUR 17,135 million relating to outpatient services;
- and EUR 4,989 million for hospital services.

In reality, the total amount of healthcare consumed by Italian households could be adjusted downwards by 5.4%, a percentage that corresponds to the sum of final consumption expenditure in the rest of the world by resident households (equal to EUR 17,428 million) and final consumption expenditure in the national economic territory by non-resident households (equal to EUR 35,866 million). The sum of the two expenses mentioned, as a percentage of the total expenditure of households for final consumption (equal to EUR 989,968 million), corresponds exactly to the 5.4% mentioned[1].

[1] Source: ISTAT, data processing on household consumption, *Italian Statistical Yearbook 2016*.

If – by logical extension – the same percentage is applied to the total expenditure for healthcare consumption, or EUR 35.681 million, it would be possible to obtain the total health expenditure, net of non-resident households and expenses incurred in the rest of the world by resident families, and it would reach a final figure of EUR 33,754 million instead of the EUR 35,681 million, as shown in table 5D of the Part Three.

As for the data present in this table that relates to the caregiver survey, it is specified that with respect to the total estimated expenditure, amounting to EUR 26,425 million, the EUR 9,293 million for the purchase of medicinal products + healthcare articles + therapeutic material was calculated by adding the corresponding items of Tables 3 and 5 of Part Three, and precisely:

	Mil. of Euros
– Co-payment charges for drugs (Table 3)	2,686
– Expenditure in addition to that provided by the public health system incurred for the purchase of prostheses and healthcare equipment (Table 3)	1,049
– Additional expenses for the purchase of drugs without a prescription (Table 5)	2,010
– Expenses for the purchase of drugs for which prescription is mandatory but whose cost is not covered by the NHS (Table 5)	1,096
– Expenses over the Internet for the purchase of drugs (Table 5)	136
– Expenses for healthcare articles (Table 5)	372
– Expenses incurred for the purchase of prostheses and healthcare equipment (Table 5)	1,944
Total	**9,293**

In particular regarding the co-payment charges paid by Italian families together with charges for *intramoenia* services, we wanted to make a comparison with official data. The following (see chart) is the result, from which it can be assumed that the values used are reasonably in line with those estimated on the basis of caregiver statements (the higher value of drug-related co-payment charges is probably also accounted for by the expenses incurred for the purchase of drugs without a prescription).

A separate case is represented by the co-payment charges for tests and diagnostic tests, for which we should probably be satisfied with the estimates made on the basis of the aforementioned caregiver survey, as there is no official data regarding this.

	Mil. of Euros
Co-payment charges for drugs	
– According to the 2017 caregiver survey (Part Three/Table 3)	2,686
– *According to 2016 IMS data*	1,539[1]
Co-payment charges for laboratory tests	
– According to the 2017 caregiver survey (Part Three/Table 3)	1,719
– *In the absence of official data, the previous figure is used*	*1,719*[2]
Co-payment charges for diagnostic tests	
– According to the 2017 caregiver survey (Part Three/Table 3)	1,239
– *In the absence of official data, the previous figure is used*	*1,239*[2]
Co-payment charges for specialist visits	
– According to the 2017 caregiver survey (Part Three/Table 3)	1,702
– *According to 2015 Ministry of Health data*	*1,653*
Co-payment charge for the Emergency Room	
– According to the 2017 caregiver survey (Part Three/Table 3)	71
– *According to 2015 Agenas data*	*43*
Expenses for visits and *intramoenia* day hospital services	
– According to the 2017 caregiver survey, including specialist visits (EUR 897 million) and day hospital procedures (EUR 133 million) (Part Three/Table 5)	1,030
– *According to 2015 Ministry of Health data*	*1,380*
Total according to the data from the caregiver survey	**8,447**
Total according to official data	***7,573***

(1) The difference can reasonably be attributed to expenses for drugs purchased by the families in different ways and attributed, by totaling them, to the co-payment charges.

(2) Unlike co-payment charges for drugs, it should be noted that the amounts for specialist visits and the Emergency Room are "deducted" as an advance on the revenues acknowledged by the Regional Health Services to private centers that perform tests and diagnostic tests.

As for the reconstruction of outpatient services, with reference to the caregiver survey data (EUR 14,685 million), the following entries were used:

	Mil. of Euros
– Co-payment charges for tests (Table 3)	1,719
– Co-payment charges for diagnostic tests (Table 3)	1,239
– Co-payment charges for specialist visits (Table 3)	1,702
– Expenses incurred for visits to the primary care physician for special services (Table 3)	120
– Expenses for clinical testing performed in the laboratories (Table 5)	620
– Expenses for diagnostic tests (Table 5)	710
– Expenses for private specialist visits to the primary care physician outside of normal office hours (Table 5)	828
– Expenses for nurses, acupuncturists, podiatrists, psychologists, etc. (Table 5)	728
– Expenses for dental care (Table 5)	7,019
Total	**14,685**

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And finally, for hospital services (equal to EUR 2,447 million) we proceeded in a similar manner, adding together the amounts relating to the following items:

	Mil. of Euros
– Co-payment charges for access to the Emergency Room (Table 3)	71
– Expenses for intramoenia specialist visits (Table 3)	897
– Expenses for any intramoenia day hospital procedures (Table 3)	133
– Expenses for patient support and assistance at public facilities located outside the Municipality, Province, Region, or abroad (Table 3)	313
– Expenses for access to a private Emergency Room (Table 5)	12
– Expenses for private day hospital surgery (Table 5)	104
– In-hospital stay expenses (Table 5)	681
– Expenses for patient support and assistance in paid private facilities located outside the Municipality, Province, Region, or abroad (Table 5)	236
Total	**2,447**

The expenses for assistance were calculated using the same method, which is by adding together:

	Mil. of Euros
– expenses for assistance services (see Table 3/Part Three)	3,110
– expenses for assistance services (see Table 5/Part Three)	2,494
Total	**5,604**

Finally, the supplementary expenses based on the real cost of care-workers (both regular and non-regular) were calculated by subtracting the sum of the expenses shown in Table 3 (EUR 1,743 million) and those shown in Table 5 (EUR 1,171 million) from the total of the estimated expenses as follows (amounting to EUR 10,707 million, with an additional difference equal to EUR 7,793 million).

The estimate was attained by means of the following logic:

a) the 2017 caregiver survey shows how:

– families pay careworkers for a total number of cases equal to	723,000 units
– the relative percentage out of the number of resident households (equal to 25,797,000) would be	2.8%
– the total cost calculated on the basis of statements given in the caregiver survey would be equal to	3,023 mil. of euros

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– which would correspond to a weighted average, starting from the data contained in Table 3 (equal to EUR 3,377) and in Table 5 (EUR 6,214), to obtain a value equal to — EUR 4,187 per family

b) an initial estimate of the number of careworkers could be as follows:
   – the estimate of the number of completely non-self-sufficient elderly people aged 65 years and up would be equal to (See Nadio Delai, Anziani & Continuità assistenziale, FrancoAngeli, 2012) — 2.3% out of the total of resident population
   – 2.3% out of the 60,600,000 resident population would be equal to — 1,393,800 units
   – a rough (but cautious) estimate allows it to be assumed that 50% of the previous figure uses one or more careworkers, and thus yields a figure of about — 700,000 units
   – moreover, persons over 80 years of age alone residing in the country amounted to 4,048 million in 2016: if it is assumed that about 48% are not self-sufficient (albeit with different degrees of intensity), this would yield a figure of potential "users" of careworkers equal to 1,942,000 units, to which the same cautious criterion referred to in the previous point could be applied (50% of effectively non-self-sufficient individuals), to arrive at an estimated number of care-workers equal to — 932,000 units

c) about three years ago the CENSIS Foundation estimated the number of careworkers at — 830,000 units

d) a recent INPS document (*Statistics in Brief,* June 2017, dedicated to domestic workers, with reference to the year 2016) provided the following statistical information:
   – domestic workers, including both domestic helpers and careworkers, which have been decreasing since 2013, nevertheless in 2016 still equal — 866,747 units
   of which careworkers with a regular work contract are — 379,326 units
   – the average weekly working hours of the careworkers (88.1% attributable to women) can be summarized as follows:
      - for 51.9% — More than 30 hours per week (even exceeding 50 hours)
      - for 35.2% — Between 20 and 29 hours per week
      - for 7.7% — Between 10 and 19 hours per week
      - for 5.2% — Up to 9 hours per week

e) at this point, taking into account the remuneration for a regular work contract for the maximum number of hours declared by the INPS (EUR 13,000 and higher), to which we must add the cost of substitute careworkers for the days of weekly leave and for

holidays, as well as food and accommodation, we can determine a maximum remuneration (though still cautious) equal to EUR 23,000 per year including tax contributions and severance indemnity*, using a sliding scale according to the following hypothesis:

– more than 30 hours per week (with substitutes, room and board), referring to 51.9% of careworkers, with 6 or more hours a day — EUR 23,000
– 20-29 hours per week (with substitutes, room and board), referring to 35.2% of careworkers, with 4-6 hours a day — EUR 12,000
– 10-19 hours per week (with substitutes, room and board), referring to 7.7% of careworkers, with 2-4 hours a day — EUR 7,000
– and finally, 9 up to hours per week (with substitutes, room and board), referring to 5.2% of careworkers, with 1-4 hours a day — EUR 5,700

(*) The figure of EUR 23,000 would represent the annual cost for a family (using an extremely cautious calculation) that uses a regular full-time careworker, including food and accommodation according to the following scheme:

. Remuneration (EUR 1,000 + EUR 100 of tax contributions) x 13 monthly payments	EUR 14,300
. Substitute careworkers during the year	EUR 4,800
Total	**EUR 19,100**
. Board EUR 300 for 11 months	3,300
. Accommodation	-
Total	**EUR 22,400**

f) at this point the quantitative (rather than cautious) estimate of 700,000 total careworkers can again be used, which should in fact breakdown as — 380,000 regular, 320,000 under-the-table

The aforementioned 700,000 units can be distributed according to the composition % by number of weekly service hours as per the previous point d) and by salary levels.
It should be noted that family costs are very often the same for regular and under-the-table wages, as there is often an explicit request for the "off-the-books" solution by careworkers to increase their salary for which, among other things, no takes are paid. The result achieved by adopting the minimal estimate of 700,000 units would be:

	Mil. of Euros
▪ 51.9% of 700,000 = 363,300 x EUR 23,000	8,356
▪ 35.2% of 700,000 = 246,400 x EUR 12,000	2,957
▪ 7.7% of 700,000 = 53,900 x EUR 7,000	377
▪ 5.2% of 700,000 = 36,400 x EUR 5,700	207
Total	**11,897**

Even if a 10% reduction in the total cost estimate was applied as a further precaution, it would still yield — Mil. of Euros **10,707**

Excluding the cost of careworkers estimated on the basis of the statements of the caregivers which amounts to EUR 3,023 million (adding the values contained in Tables 3 and 5 of Part Three, respectively) would result in an additional figure equal to — Mil. of Euro 7,684

After working around the data concerning the out-of-pocket spending by Italian families in the healthcare sector, the costs for assistance were estimated, in order to complete the data provided by ISTAT to date. To this end, the following two scenarios were created, aimed at estimating the relationship between assistance expenses and healthcare expenses, taking into account the information gathered through the caregiver survey: the conclusion is that assistance expenses would represent 50.3% of the total healthcare spending.

Composition of healthcare and assistance expenses, calculated on the basis of the results from the caregiver survey (see Tables 3 and 5 of the Part Three)

	Borne by families who have had access to public services		*Borne by families who have made use of the private market for full payment*		*General total*	
	A.V. (in mil. of euro)	*Comp. %*	*A.V. (in mil. of euro)*	*Comp. %*	*A.V. (in mil. of euro)*	*Comp. %*
Healthcare expenses	9,929	76.1	16,496	86.9	26,425	82.5
Assistance expenses	3,110	23.9	2,494	13.1	5,604	17.5
Total	13,039	100.0	18,990	100.0	32,029	100.0

Estimate of the relationship between assistance expenses and healthcare expenses, based on what has been calculated from the results of the caregiver survey, but integrated with the estimate of the real cost of careworkers

	in millions of Euro
Total healthcare expenses	26,425
Total assistance expenses, including the extra adjustment for careworkers, amounting to EUR 7,684 million	13,288
Total	39,713
% of assistance expenses out of total healthcare expenses (13,288 : 26,425 x 100)	50.3%

Applying the same percentage to healthcare expenditures as provided by ISTAT for 2016, taking into account what was declared by Italian families, amounting to 35,681 million euros (see Table 1 / Part Three), one would obtain an amount of EUR 17,948 million.

Which would mean:

- a per capita healthcare expenditure for the entire Italian population of EUR 589;
- a per capita assistance service expenditure for the entire Italian population of EUR 296;

– for a total per capita out-of-pocket expenditure for healthcare and assistance services for the entire population of EUR 885.

Finally, the third method used to prepare this Report involved selecting the usual set of facility indicators for the most recent data available on the Italian hospital system. These relate to the number and type of facilities and data relating to the activities, staff size and expenses. These indicators may be found Part Four of this Report.

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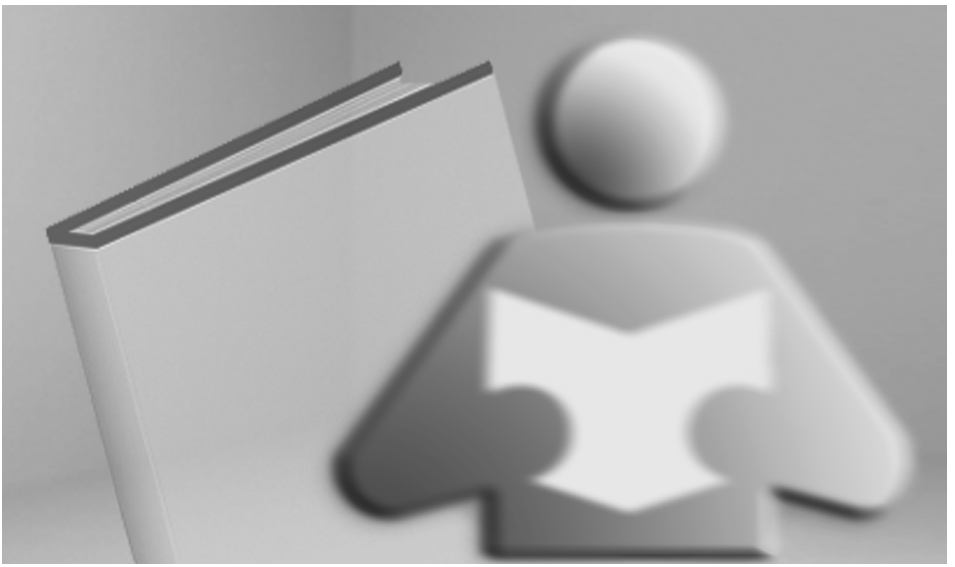

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Again this year the 2017 Health & Hospitals Report gives an account of the performance of the Italian hospital system, which is quite a substantial organization: 1,100 healthcare institutes, 200,000 patient beds, 8.9 million hospitalizations, more than 630,000 workers and a total expenditure of EUR 62.3 billion, equivalent to 55.3% of total public health spending.

Thus it is an extremely complex "machine", on the one hand, and an equally complex world of users receiving the various services, on the other. For these reasons the Report takes both components into consideration.

Firstly, this year users and caregivers were assessed as they endeavor to deal with all of the continually increasing weaknesses inherent to public services and to implement reaction strategies to offset them. These include seeking out alternatives in accredited (and non-accredited) private facilities, making use of hospitals outside the home Region, improper use of the Emergency Room for hospitalization, and out-of-pocket spending by families. The individual types of these out-of-pocket expenses (whether for healthcare or assistance) have been identified, along with the reasons that have driven the families to invest their own resources. Parallel to this, the financial statements of the Hospital Centers have been analyzed, identifying some "anomalies" that might hide improper methods of covering budgets: this certainly does not point in the direction of transparent and comparable reporting - as provided for by current legislation - that helps to better manage (limited) public resources to provide better service to users.

Italy needs to defend the universal and inclusive principle upon which the National Health System is based in a concrete manner, but precisely for this reason it is absolutely necessary to make the most appropriate use of the financial resources available to better balance the needs of patients, on the one hand, and the efficiency/effectiveness of facilities and services, on the other.

Ermeneia – Studi & Strategie di Sistema is a company that specializes in providing analytical and consulting activities to trade associations and public and private clients, including those operating in the healthcare service sector, who are actively redesigning their presence and operational methods to remain in step with progressive changes in Italy.

AIOP – Associazione Italiana Ospedalità Privata (Italian Association of Private Hospitals) is a trade association that represents private healthcare facilities and hospitals, accredited or otherwise, throughout every region of Italy, which employ nearly 70,000, accounting for 11% of the operators of the entire system, who provide hospital services to 15% of patients.

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La passione per le conoscenze

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