

# Diversity and regional inequalities in the Spanish ‘system of health care services’

Word count (without): 7273

With (bibliography): 8756

Guillem Lopez-Casasnovas<sup>1</sup>, Joan Costa-Font<sup>2,3</sup> and Ivan Planas<sup>1</sup>

<sup>1</sup>Departament d’Economia i Empresa, Universitat Pompeu Fabra, Barcelona.

<sup>2</sup>Departament de Teoria Econòmica, Universitat de Barcelona, Barcelona.

<sup>3</sup>London School of Economics and Political Science, London.

Contact author: Professor Guillem López Casasnovas. Departament d’Economia i Empresa. E-mail: [guillem.lopez@upf.edu](mailto:guillem.lopez@upf.edu). Guillem López- Casasnovas acknowledges the financial support received from SEC2003-05045/ECO. Joan Costa-Font is grateful for the financial support from SEC2003-00036/ECO. We acknowledge the comments from Elias Mossialos, Alan Maynard, Adam Oliver and other participants in the IMPACT project workshops. We are grateful to Marin Gemmill and Kate Henderson for the English editing as well as well as the comments of three anonymous referees though all possible errors are our own, and the usual disclaimer applies

## **Summary**

The consolidation of a universal health system coupled with a process of regional devolution characterise the institutional reforms of the National Health System (NHS) in Spain in the last two decades. However, scarce empirical evidence has been reported on the effects of changes in health inputs, outputs and outcomes, both at the country and at the regional level. This paper examines health care reform in Spain along with empirical evidence on regional diversity, efficiency and inequality of these changes in the Spanish NHS. Results suggest that besides significant heterogeneity, once region-specific needs are taken into account, there is evidence of efficiency improvements whilst inequalities in inputs and outcomes, although more 'visible', do not appear to have increased in the last decade. Therefore, the devolution process in the Spanish Health System offers an interesting case for the experimentation of health reforms related to regional diversity but compatible with the nature of a public NHS, with no sizeable regional inequalities.

*Keywords:* health expenditure, devolution, National Health System, regional inequalities, Spain.

*JEL:* H7, I38, H31.

## **Introduction**

Universal access and devolution of health care to the Spanish regions, - Autonomous Communities, (ACs) have been the main features of an evolving public health system over the last 25 years. Although universal access to health care was formally defined in the 1978 Constitution and articulated in the 1986 General Health Bill, general taxation did not replace payroll taxes until 1999 [1]. Moreover, noteworthy cultural, political and economic heterogeneity gave rise to a devolved model of ‘welfare governance’, mainly affecting health care and education. Indeed, between 1981 and January 2002, a gradual process of health care devolution took place and completed the devolution of health care responsibilities to all ACs. Health care reforms in Spain, albeit mostly driven by cost-containment pressures, have run parallel to those transcendental changes [2-5]. However, there has rarely been a complete assessment on what the health system buys and its value once regional heterogeneity is taken into account [5]. Ongoing research questions relate to the influence of health care reform on efficiency - by improving accountability and cost containment – and the achievement of equity and social cohesion.

This paper examines the last two decades of health care reforms taking place in Spain at the state as well as the regional level. We argue that the health system qualifies as a ‘system of regional health services’ - often termed a National Health System (NHS) -. Although there is significant heterogeneity (diversity), once region-specific needs and efficiency improvements are accounted for, inequalities in outputs and outcomes do not seem to have increased over time. Furthermore, the decentralisation of health care has allowed health care reforms to break an arguably monolithic (centrally managed) organisation of services by placing financial pressures on politically and fiscally accountable regions. The following section describes the health system structure, section three deals with the resource allocation system, section four provides evidence on access and outcomes and a final section concludes and provides the policy implications from our study.

## **Structure of the health care system**

### *Organisation and funding*

The Spanish National Health Service has transformed significantly in the last half century. In the early 1940s the health system was means tested and insured roughly one fifth of the population. Coverage had expanded to almost half of the population by 1960 and after significant investments; coverage reached roughly 80% of the Spanish population by the mid 1970s. Democracy and the 1978 Constitution defined citizens' rights to health care, although the creation of a universal and decentralised health care system was only explicitly defined in the General Health Bill of 1986. Central and regional governments have ever since extended coverage and fostered health care reforms on a decentralised basis. In 1999, the gradual transition towards a full general tax-based financing regime was accomplished and, in 2002, the decentralisation process to all Spanish regions was complete. Previously, only the historical regions had health care responsibilities transferred, and a centrally managed agency (so-called 'Insalud') took responsibility for health care services of the remaining regions [2]. The transfer of health responsibilities to Catalonia was completed in 1981, followed by Andalusia (1984), the Basque country and Valencia (1988), Galicia and Navarre (1991), the Canary Islands (1994) and from 2002, the rest of AC have been empowered with health care responsibilities.

Although health care is legally defined as an 'essential public service', the precise content of the health care entitlement and an explicit definition of NHS goals, at the state and regional levels, it is rarely defined. The 1986 General Health Care Act states that the NHS is expected to work towards health promotion and illness prevention by providing health care to all residents in Spain, and achieve equality of access by overcoming any social and geographical differences. Jointly with education, health care is currently the primary responsibility of the ACs and accounts for 60-70% of total AC funds. At present all ACs enjoy full health care responsibilities with the exception of some legal and financial restraints imposed by the central government. Once health care responsibilities were

transferred to all ACs , health care finance was integrated in the mainstream regional financing system. Besides regional health care financing, the Cohesion and Quality Law, passed in 2003 by the Conservative government, states the need for strengthening geographical equality of health protection as well as quality of care. Moreover, the Ministry of Health (MoH) has mainly coordination goals in order to avoid potential diseconomies of scale and scope potentially caused by narrowly defined regional health policies. Insofar ACs are different in size - ranging from less than three hundred thousand to almost eight millions inhabitants – this stands as a ‘challenging goal’ if regional responsibilities for health care are to be respected.

While basic legislation is in principle issued by the central state, some decisions draw upon the input of the Inter-Territorial Council of the NHS, an advisory committee comprising representatives from the central and regional governments where coordination should legally take place. The MoH formally undertakes central governance of the NHS, although in some critical domains the Ministry of Social Security, still the owner of the NHS buildings and the Ministry of Finance have significant regulatory roles. As a result, the MoH can be classified as comparatively weak, bearing in mind the shared responsibilities with other ministries at the central level, and the strength of the regional ministries after the devolution process. An illustrative depiction of the Spanish NHS is given in Figure 1.

**[Insert Figure 1 about here]**

The main premise underpinning devolution was to better serve specific health care demands and regional preferences [3-4]; however, there is disagreement about whether the NHS should limit ‘regional diversity’ due to differences in resources. Ideally, a decentralised NHS should define the “minimum” set of benefits and implicitly allow regions to develop additional coverage at the expense of their own fiscal effort, thus transferring risk management to the ACs. Heterogeneous health expenditure might then result only from previous differences in clinical practices and central priorities in health care allocation.

Interestingly, the competitive structure of the Spanish NHS before 2002 promoted political accountability (through regional parliaments) better than fiscal accountability (through regional taxes and patient surcharges). This changed in 2002 when a floor on health expenditures has been established for all the ACs, although all ACs can however increase regional tax revenues consistent with their public spending priorities in health care.

On the whole, the financing of Spanish health care system is roughly proportional (or mildly progressive), given the mix of slightly progressive income taxes and regressive taxes on consumption, indicating that every citizen contributes to the finance of health care by a similar fraction of his/her earnings, regardless of their total level of health. Yet, it is important to note that when general revenues replaced payroll taxes in financing health care, the system became less progressive since indirect taxes replaced the quasi-proportional tax on wages [9].

#### *Health care funding, expenditure and expenditure determinants*

Health care expenditure accounts for 7.5 % of GDP of which 75% (5.5% of GDP) corresponds to public expenditure and 25% (2.1 % of GDP) to private expenditure (see Table 1). Furthermore, health care accounts for on average about 40 % of regional expenditure, although health expenditure relative to ACs GDP varies from 3.6% in the Balearic Islands to 7.5% in Extremadura [10-11]. Individuals can supplement the NHS by purchasing private health insurance (PHI), which covers mainly primary care and some hospital amenities. Appendix 1 offers a general frame of flows (finance, provision and production) for the Spanish NHS. The situation of the regional Catalan system is also included as an example of the extent of potential diversity of health care in Spain.

**[Insert Table 1 about here]**

Two recurrent issues in the Spanish health care reform debate are whether the NHS is over (under) funded and how health care expenditure evolves with income. Interestingly, Spain's

share of health spending in 1980 was one of the smallest among other European NHS systems and remained practically unaltered during the 1980s until 1988, when it increased to 6.1 %, surpassing the UK and equalling Portugal in the following year. Thereafter, Spain's share of health spending remained relatively constant. Thus, in the last two decades there has been a steady increase in the per capita resources devoted to health care, although in a context of a high economic growth, public expenditure on GDP has not increased proportionally.

When examining the components of health expenditure, we find that whereas inpatient care increased significantly during the 1980s, in the 1990s relative inpatient expenditure decreased, mainly due to reforms in the primary care sector. At the beginning of 1990s, about 55% was spent on inpatient and specialised care, 16% on primary care, research and public health account for 4%. Pharmaceuticals have been steadily rising from 18% in mid nineties to 23% in 2002. Outpatient expenditure has remained stable [12].

Prices in the health sector have been slightly higher than those in the rest of the economy, although price differences have not increased, mainly due to wage deflation of health professionals. Therefore, other determinants are behind the health expenditure rise: these include health care coverage, the ageing process and especially significant changes in utilisation patterns. Although there is some methodological debate [13-14], evidence from previous studies [15-16] suggests that whereas from 1980 to 1986 'prices' were the main driver of health expenditure, expenditure increase was driven from 1987 onwards by 'volume' instead. Table 2 reports a decomposition of real health expenditure over the 1990s [5]. Ageing and the extension to universal coverage exert a marginal influence in expenditure change, whilst utilisation – measuring frequency, diagnosis and the therapeutic content of health care delivery- appears as the main determinant of real health expenditure.

**[Insert Table 2 about here]**

Alongside public expenditure, the composition of private health care expenditure has significantly changed between 1980 and 2000 (last year available) [17-18]. Dental care, which is generally not covered by the NHS, accounted for 17% of private expenditure in 1980, increased to 30% in 1990 (30%) and has since remained at 27%. In contrast, the share of private health expenditure on out-of-pocket drug expenditure declined from 36% in 1980 to 18% in 1990 and then increased to 20% in 2000 due to the decline of the actual drug cost sharing. Indeed, pharmaceutical cost sharing accounted for 18% of total public expenditure in 1980, declining to 11% in 1990 and to 8% of total drug spending in 2000. Similarly, out-of-pocket medical care declined in the 1980s from 22% to 17%, mainly due to the extension of primary care and the expansion of public coverage. Finally, private health insurance coverage increased from 14% to 18% of total private health expenditure between 1980 and 2000.

Private health care plays a complementary role in the NHS, which does not provide coverage for certain services (e.g., dental care,) and fulfils the demand for quality of care (hospital hotel facilities and waiting list avoidance in primary care). Private provision, financed by public funds, is still possible for some civil servants at no additional cost (which is chosen by 83% of them). Up until 1999, expenditure of private health care lead to 15% tax relief in the personal income tax, which has proven to be a regressive fiscal expenditure [18-19]. Yet, whether privately subsidised consumption has reduced public consumption is still an open question to debate. Since 2000 only private health care financed by insurance premiums paid by firms were tax deductible (from corporation income tax) but this has had so far no significant effect on the number of private insurers.

### **Resource allocation, incentives and appropriateness of care**

#### *Budget allocation*

Funds are centrally collected and distributed to ACs, with the exception of Navarre and the Basque Country and some minor taxes for the remaining regions. Before 2002, the system



operated under a single central transfer. Once the Spanish Parliament determined the amount of health care expenditure in the National General Budget, expenditure was allocated to the regions by means of a block grant following the lines of an unadjusted capitation formula. Although fiscal regional responsibility has been progressively increasing, - by transferring an increasing percentage up to 30% of revenues plus a 20% surcharge on the personal income tax -, the vicious cycle of overspending (prevalent as normal practice both before and after devolution process) has persisted. The reasons for this include a lack of incentives to cut expenditure and unofficial transfers to some ACs from the central state.

In 1994, the government unsuccessfully committed to keep expenditure growth rates in line with GDP growth and imposed tighter conditions for financing spending overruns, by defining full regional responsibility for any overspending. However, this later provision was not credible due to the limited regional fiscal autonomy and regional political pressures for higher social spending. By 2002, a deep structural reform was implemented, which resulted in the addition of regional health care finance to the rest of regional transfers. The new allocation formula weights are as follows: population 75%, demographics (population over 65) 24.5% and 'insularity' (for Balearic and Canary Islands) 0.5%. Remarkably, no health indicators are present on the formula [7-8]. The agreement includes, on the financing side, regional participation in the revenue of most of the centrally collected taxes, - with the exception of the corporation income tax- with open-ended margins for complementary fiscal regional autonomy. This implies, sharing 33% of the personal income tax collected at the AC level, 35% of VAT, 40% of petrol as well as alcohol and tobacco revenues according to the estimated consumption share per region in addition to 100% of some other minor taxes (such as taxes on electricity production, inheritance, property transfer and taxes on gambling). Furthermore, a new retailer petrol surcharge, earmarked to fund health care, may be optionally introduced by the AC. Territorial equity is pursued by three mechanisms: a 'cohesion fund' to compensate cross- boundary flows and for foreign European patients treated in the regions, a 'sufficiency fund' to ensure a minimum financial capacity and 'an equalisation fund' to contain regional diversity. In order to preserve cohesion by avoiding

'excessive' deviation in per capita health spending amongst regions, central transfers will favour those ACs that show increases in public health care coverage (e.g., due to immigration) by a pre-specified amount (three points above the Spanish average). Finally, the overall picture of the variation of per capita budgets between 2002 and 2004 (20% above and below the state average), point out the effort of AC to finance health care by trading-off some other items of public expenditure or increasing its taxes above the central state base line. In any case these figures are still low when compared to other decentralised states [20].

The completion of the devolution process in 2002 was accompanied by the integration of health care to mainstream regional finance (2002). In financing system previous to 2002, AC funds were determined by a political bargaining between the central and the regional departments of health. However, the allocation of regional health care funds now depend, firstly, on the bargaining between Finance Ministers at the central and regional level (to determine the overall ACs funding) and, secondly, at the regional level, between ministers with expenditure responsibilities within each AC. Regional parliaments are entitled to a more decisive word on health policy issues. Yet, if discretion in rising regional tax revenues increases, we should then expect higher diversity in health care resources in the next future. Diversity itself should not be a cause for concern, provided that the basic minimum package is covered. Indeed, additional funds to the regional health system come from region specific –sources and pre-equalisation system is already in place to match basic expenditure needs and regional fiscal capacity. At any rate, the central state requires ACs to achieve a minimum spending on health, mostly defined by regional expenses at the point of transfer, with a minimum rate of increase centrally determined plus a vertical levelling fund according to the differential evolution of the population covered by the regions. Finally, a Cohesion Fund, funded by the central budget devotes resources to subsidise cross boundary flows of patients amongst regions. Although the fund aims at compensating AC for additional expenditures –other than those actual costs financed with the initial transfer- the cost of patients from other European countries treated in Spain is centrally managed without yet explicit and transparent compensation to those AC facing a higher fiscal burden.

Some caveats exist on how the central state will compensate for new central regulations or pricing policies (e.g., new drugs to be reimbursed, and centrally authorised new health technologies) that affect regional expenses. A precise definition of the basic health care package will become a necessity if ‘arbitrage’ amongst ACs is to be avoided, given the comprehensive mobility costs. Handling other variations in policy, such as those applied to drugs, may not be straightforward. Although regions are not entitled to negotiate drug prices, they may well influence physician’s prescription patterns, which in turn enhance new challenges to the existing marketing departments of the drug companies.

*Health care delivery and incentives: payment to providers*

Health care delivery is mainly undertaken through a network of publicly owned inpatient and outpatient centres, with significant geographical differences (mostly Catalonia) in the way services are contracted out to the private sector. Although access is free, one sixth of Spanish population purchase supplementary health insurance, mostly in richer urban areas as a means of avoiding ‘waiting lists’ in elective care and receiving hospital amenities and prompt access to health care [10-11]. Absence of transparent waiting lists information counterbalances tight NHS budgets (particularly in the last decade), playing the former the role of ‘implicit prices’.

Primary care in Spain has progressively moved towards better-integrated provision, geographically organised in ‘health zones’ and managed at the level of the ‘health area’ covering 50-100 thousand inhabitants. Ambulatory care is organised in Health Care Centres (average time per GP consultation is 6.6 minutes), where most GPs and specialists work full time with a basic salary payment and civil servant status. However, capitation formulas have been progressively re-introduced in financing primary care, albeit limited by the fact that doctors are salaried and capitation does not account for specialist referrals or drug prescription costs (except for some geographical areas in Catalonia and Valencia).

A gate-keeping system was formally established in 1986. Spain has a surplus of health professionals per 100.000 inhabitants, which doubles that of the UK. This surplus and the extent of public-private practice compatibility help maintaining the low relative public wages of active physicians, 70% of whom are employed in the NHS [42]. Within a single health area, the freedom to choose a primary care physician and some basic ambulatory specialists is allowed but rarely exercised.

The Spanish hospital network is made up of approximately 800 hospitals dispersed throughout different ACs. With the exception of Catalonia, where just 36% of total beds are provided by public hospitals, the system is predominantly hierarchical (approximately 68% being publicly owned), although contracting out accrues already 15% of public expenditure (see Figure 1 in Appendix). The vast majority of the staff is employed on a salary basis, and the hospital reimbursement system has moved from retrospective to quasi-prospective payment systems. Spain displays one of the lowest EU ratios of hospital beds per 1.000 inhabitants. The average length of stay is about 9 days, and the bed occupancy rate is roughly 80%. The number of beds per 1000 inhabitants is 3.9. However, trends exhibit a reduction in acute beds and a small rise of long-term care centres as population ages.

Reforms in health care provision in some ACs have led to the development of regional agencies for health care purchasing with a semi-autonomous status from the Health Departments. Catalonia and the Basque country first instituted quasi-independent public body to coordinate the public coverage function whilst decentralising purchasing at the health care area level. In Catalonia there is public provision (finance) and both public and private (non profit) production of health care, and more than half of hospital activity is produced in 'non Social Security owned beds' [5]. The implementation of a purchaser provider split in Catalonia had a sound basis, as almost two thirds of hospitals were private (non-profit), and as a result, purchasing services from private sector hospitals was already comprehensively integrated. A weighted health care unit (*unitat bàsica d'assistència*, UBA) was designed by the Catalan system to measure hospital activity and reimburse hospitals, and was later adapted by the Spanish Ministry of Health. During the mid 1990s, Andalusia

and the Basque Country introduced a semi-prospective payment system with DRG case-mix adjustment, and in 1998 Catalonia implemented a new mechanism for paying hospitals that combined payment of both 'structure' (fixed costs for stand by services, approached by 'Grade of membership' multivariate classification techniques) [2] and 'activity' (DRG-measured). The Andalusian Health Authority has been innovative in monitoring drug prescriptions to contain costs and on setting up new forms of clinical coordination based on disease management strategies. In all these cases, consumers' satisfaction has significantly increased [4].

In the 1990s, INSALUD, the central state board for managing the still not transferred health care services, implemented a contractual system and developed activity indicators and contracts that were intended to improve efficiency. From 1997 some new public hospitals became self-governed units (ruled by their constituent bills and not by common administrative law) and from 1999 other existing public hospitals can become quasi-independent agencies (less administrative regulation). This has caused trade unions to complain on potential differences in wages and working conditions, although there is no clear evidence of the effects on hospital performance [21].

Along with primary and inpatient care, the NHS funds 92% of total pharmaceutical expenditures. Because the density of pharmacies is high and has increased 9% in the nineties, this has improved access to drugs - and pharmacies are paid under mark-up basis. Price regulation design is a variant of the traditional reference pricing system (above the reference price the drug is excluded - from public finance), although weak generic penetration still limits its effectiveness in reducing expenditure. Some AC (e.g., Catalonia, Andalucia, Basque Country) have set up regional health technology assessment agencies (HTA), although their functioning has been largely uncoordinated and serve heterogeneous policy goals. Long-term care coverage is limited and mostly means tested, regulated at the AC level and provided at the local level. Public home care is marginal (4% of the total supply of long-term care) and the public sector finances about 7% of residential care. Integration of health and social care is complex feature to accomplish when social care is a

responsibility of the social security and local authorities, while health care is a regional responsibility [22].

According to the Spanish Doctors State Confederation in 2004 there are 4.12 active doctors per 1000 inhabitants (compared to 2.99 in the EU, according to Eurostat data, and 3.53 in Europe, according to WHO data). In contrast, in 2002 Spain was below the average UE and OECD ratio of active nursing staff per 1000 inhabitants: 7.1 according to Health data File 2004 (OECD: 7.95 and Europe: 8.47), and this figure is falling as nurses' mobility within the EU increases over time.

In short, in the Spanish system physicians may be characterised as civil servants, with relatively low salaries, defined homogeneously in annual central budgets (since 2002 in regional budgets with an increasingly heterogeneity). Physicians exhibit varying working conditions (basically related to the compatibility with private practice), and are protected with 'employment for life' along with some 'degree of clinical autonomy' evidenced by some variability in clinical practice. Furthermore, the administrators of the health units are compelled to manage resources under restrictive administrative rules to control fraud and with apparently prospective budgets, according to the capability of managers facing negotiations with financiers. Finally, patients/ citizens still have a weak 'sense of belonging' to their health authority or community, other than to their local doctors. Efforts for changing the present situation include the introduction of a variable component in the physicians wages in accordance to their productivity; a *pseudo* purchaser-provider split with Program Budget Contracts (INSALUD since 1992), and a contracting-out policy (in the Catalanian case), which has proven to be illusory when providers and purchasers are both public agents (under centralized retrospective budgets). Indeed, free choice of providers might lead to the 'ratchet effect' to take place as a lower workload does not come together with lower remuneration (when salaries are fixed).

*Evidence on the appropriateness of care*

Despite differences in AC size, there are significant differences in hospital specialisation. A stylised fact was that the richer the AC, the larger the number of small and specialised hospitals. Regarding labour inputs, Navarre and Madrid have the largest physician density; both being areas with large activity and huge hospitals, while poorer ACs concentrate fewer physicians per capita. Yet, heterogeneity cannot be linked to devolution, as inequality within INSALUD regions was higher than in the rest. The nurse density rate is higher for ACs with devolved responsibilities. An additional source of regional heterogeneity can be observed with respect to technology. Catalonia, Madrid, Valencia and Andalusia concentrate more than 50% of total Spanish equipment in hospitals.

Navarre and the Basque Country display higher use of Computerised Axial Tomography. Madrid, Navarre and the Balearic Islands show higher rates of Nuclear Magnetic Resonance and Andalusia, Castilla-Leon and Murcia exhibit higher rates of homodynamic room use. INSALUD regions again experience higher variability than the rest. The same applies to gammagraphies and digital angiographies. Rates of biopsies are similar across the two types of AC, but again some regions (e.g., Galicia and Murcia) show three times higher rates of use than the Balearic and Canary Islands. When examining the use of technology, we find both differences in availability of care as well as in clinical practice [5].

Given the existing pressures for reducing waiting lists in the 1990s, regional decentralisation brought a significant reduction in the length of stay in Andalusia (33%), Basque Country and Catalonia (23%) and a rise in the number of patients treated and in the level of health care contracted-out [23]. Activity indicators as a proxy for productivity show significant regional heterogeneity and display now higher variability when compared to INSALUD regions (more unequal on per capita spending). The average length of stay in the whole country was reduced from 9.2 days in 1992 to 7.61 days in 1999. Regional heterogeneity ranks from 8 days or less in the Balearic Islands, Andalusia and Valencia up to 12 in Canary Islands and Castilla Leon.

There is still scant evidence on the reasons for variability in clinical practice in Spain and most Spanish studies focusing on this topic are recent [24]. Data shows that inter-regional differences in hospital attendance are small, although there is variability across specific procedures [25-26]. In fact, surgery intervention heterogeneity within regions is higher than that found between regions. Available specific studies find that, for example, cataract intervention ranges from 4.3 per 1000 inhabitants (Galicia) to 9.8 in Catalonia and 9 in Andalusia, the Basque Country and Extremadura. The same heterogeneity can be found for prostate intervention (benign hyperplastic) where ratios vary from 5.6 per 1000 in Aragón, Valencia and Murcia to 11.2 in Catalonia and 10.4 in Rioja [27]. Reasons for this at present are highly speculative; although the way physicians are trained and paid seem the most plausible explanations. Moreover, significant clinical variability has been identified; for example, one study [28-29] found that over a set of 20 interventions, a saving of 16 additional million euros could be achieved if the cheapest practice would have been implemented across the NHS.

Prior studies [2] using cross-correlation analysis find no identifiable geographical patterns on morbi-mortality associated to regional differences in health care inputs). Evidence suggests that after comparing trends in expenditure, utilisation and outcomes at the regional level, before and after the decentralization, differences in health care inputs are not systematically reflected in differences in outcomes. These are mostly related to within regions health related policies and not to the existing financial variation of resources across regions. Indicators measuring clinical quality of care reveal ambiguous results.

## **Access and outcomes**

### *General Issues*

Access to health care is free at the point of use to all residents (including illegal immigrants), and user co-payments are restricted to pharmaceuticals. In 2002 user charges funded less than 8% of the total public drug bill. Benefits are comprehensive, although



coverage for some services such as long-term care and dental services is limited and varies according to region.

Compared to other NHS countries, Spain ranks in the middle in terms of health spending. Once OECD health expenditures are regressed on GDP the observation referring to Spain falls in the regression line. In terms of overall performance, fairness and responsiveness, Spain is fifth in the WHO table. Thus, these results suggest that the NHS has achieved 'good value for money' at the aggregate level. In the past, health care reforms have tended to focus on cost-containment –mainly by defining positive and negative drug lists - but rarely we find an explicit assessment on the purchasing power of the health system [5].

From the delivery of health care point of view, the redistributive effect of the system is less clear [30], once we control for differences in morbidity. Early studies using data from 1987 reveal that people with similar morbidity levels do not receive similar treatments (a pro-rich bias on both public and private services). Over the period 1987-1997, there is evidence indicating that poor individuals are more frequent users of health care services, especially primary care [31], than the rest of population with similar levels of need [31-32]. Due to increasing access to health care facilities (universal access plus regional devolution), specialist services moved from a certain degree of pro-rich inequity in 1987 to some pro-poor inequity in 1997 (although these latter estimates were not statistically significant). Emergency services move in the opposite direction (from pro-poor in 1987 to pro-rich in 1997) [30-32].

### *User charges*

Most of the European Union countries introduced or expanded the co-payment system for hospital services or ambulatory services during the 1980s and 1990s, with the exception of UK, Spain and Greece. In Spain, the user pays 40% of the price on medicines prescribed by the NHS doctors (100% on private prescription drugs), with the exception of inpatients and 'exempt' groups (retired, handicapped, invalids, and people who suffered occupational

accidents) and drugs consumed on hospitals. Moreover, drugs for chronic diseases only have a 10% co-payment and a maximum amount (3.01 Euros per prescription in 2000) when explicitly prescribed by NHS doctors to patients identified as chronic. Given the relative consumption of drugs in these different groups, these co-payments amount less than 8% of the total drug bill. Finally, the existing reference pricing system for drugs can be conceived as an avoidable co-payment. Some analysis of the reference price system in Spain suggests that in its first version acted as a reimbursement ceiling and in the most recent version even exclude some drugs from public reimbursement [33-34].

Health care services outside the benefit package are subject to 100% co-payment. This affects psychoanalysis and hypnosis, sex-change surgery (which is not excluded in Andalusia), spa treatments or rest cures, plastic surgery not related to accidents, disease or congenital malformation, and dental care (only extractions are included). The Basque County and Navarre decided in 1988 to offer full public coverage of children's dental care, and this practice is being extended to almost all of the ACs. Finally, only partial subsidies exist for complementary benefits, such as some prostheses, orthopaedic products, wheelchairs, transportation, complex diets, home-based oxygen therapy, and children's hearing aids. Social and community care are also excluded from NHS benefits.

Evidence on the impact of co-payments is very limited (civil servants co-pay without exception a 30% of the price of drugs, and per capita cost one third lower), but points out that user charges are mainly a tool to raise revenue from users of the services rather than from tax payers (and this may not be always inequitable) and are intended to ration (pharmaceutical) consumption [23].

#### *Waiting lists and waiting times*

Problems of transparency and comparability of data are the most important considerations when designing an indicator for waiting lists. In 1996 there was a Waiting Times for Surgery Interventions Reduction Plan adopted by INSALUD, which pursued a reduction in

waiting lists particularly for interventions that could be undertaken on ambulatory setting (eg. cataracts, varicose veins). However, after 1999 waiting lists began to increase considerably. In 2000 that increase was especially strong in the “more than 6 months” list for heart surgery. Consequently, in 2000 a further Strategic Plan was introduced by INSALUD, which in just 3 months reduced the 6 months ‘heart surgery’ list from 602 patients to 28, with the aim of fixing the waiting time in this speciality to a maximum of 30 days.

Average waiting time in the INSALUD network for first specialist visit was 28 days in 2000, with important differences among specialities. For diagnosis tests, average waiting times ranged from 57 days for magnetic resonance, to 50 days for mammography, 29 days for ecography, and 20 days for CAT Scanner. Within the same speciality there were also some differences between areas and Health Care Centres.

In 2000, the Inter-territorial Board of the NHS agreed to review the situation of surgery organization in hospitals and the main measures proposed were to further increase ambulatory interventions (from 7% in 1995 up to 17% at 2002 of all surgical interventions), increase activity by extending surgery hours and standardize waiting times records and protocols. Some of these reforms possibly led to a reduction in waiting times on those procedures included in the list, but increased the waiting times for all those interventions not politically considered a public priority.

#### *Health outcomes*

As in other developed countries, Spain has experienced a significant improvement in health during the last two decades (Table 3). Life expectancy in 2001 was 75.6 years in males and 82.9 in females and overall has increased by 5.46 years since 1975. Consequently, this has led to a rise in the share of the elderly, who now comprise 15% of the population (and is expected to rise to 39% within the next thirty years). Life expectancy is subject to some regional heterogeneity, highest in Castilla-Leon (76.3 years in males and 83.2 years in

females) and Madrid (75 years and 83 years respectively), and the lowest in the Balearic Islands (73.2 years and 81.1 years) and Andalusia (73.5 years and 80.7 years).

**[Insert Table 3 about here]**

Although Spain may be seen as a heterogeneous country in terms of health outcomes, the coefficient of variation is not large for most of the indicators available [2]. Interestingly, distinguishing those regions with devolved responsibilities from those traditionally centrally managed does not lead to significant differences in health outcomes. In terms of avoidable mortality [35, 2], estimates suggest that although there is a north-south pattern from better to worse, which is unrelated to regional health care expenditure, some regions such as Catalonia perform better in measures of premature mortality whereas others regions such as the Basque Country experience large mortality for health service related diseases.

When examining inequalities in health outcomes, several studies show that there is a socio-economic vector, which explains differences in adjusted mortality and self-reported health status [31-32, 36-37]. Figure 2 provides evidence on the inter-regional inequalities in health expenditure per capita and in mortality separating regions with centralised health care responsibilities (insalud) from the rest (including and excluding regions with fiscal responsibility so called 'foral regions'). Interestingly, although departing from different inequality levels in the first nineties, there is a meaningful convergence process in inequality occurring by the year 2000. Furthermore, inequalities in other health indicators such as inter-regional inequalities in health (measured in terms of mortality and potential years of life lost) show a similar declining pattern among regions [5]. Occasionally, regions with centralised responsibilities appear as exhibiting higher inequalities in health expenditure. However, no statistically significant correlation has been found between inequalities in health expenditure and inequalities in health outcomes indicators. The correlation between per capita health expenditure and inequalities in resource physicians' availability was 0.082 ( $p > 0.05$ ). Interestingly enough, regional inequalities in health care are positively correlated with per capita health expenditure ( $r = 0.71$ ,  $p < 0.05$ ) whereas no

statistically significant correlation coefficient was identified with regional inequalities in mortality for all ACs. The same applies for only those regions with centralised health care responsibilities, although the correlation coefficient between inequalities in this case is larger ( $r=0.92$   $p<0.01$ ).

**[Insert Figure 2 about here]**

Other than focussing on inter-regional inequalities, one of the largest concerns is the existence of intra-regional disparities. Unfortunately, studies estimating intra-regional disparities and their determinants are still scarce. Geographic patterns of mortality already highlight some spatial distribution of mortality linked to the variation in social and environmental features. This is the case of studies based on small areas (called ‘zones’) dealing with the distribution of the comparative mortality ratio (CMR) within each AC [38]. Interestingly, out of eight ACs exhibited ratios above 100, six of these were located in the south of Spain. By examining the difference between the maximum and minimum CMR, it can be seen that the largest differences are in Valencia and the Canary Islands and the smallest differences are in La Rioja, Navarre, Asturias and Cantabria. Therefore, it can be argued that large inequalities within small areas of specific ACs remain. The lowest intra-regional inequalities are found in the Basque Country ( $CV=0.16$ ); these could be attributed to the significant rise in public inpatient care and the success in extending the primary care reform. The opposite applies to Catalonia, with high variability in outpatient care ( $CV=0.6$ ) possibly because the primary care reform was completed later than other ACs [5]. In what regards citizens’ perceptions and satisfaction with health care, Spain occupies a middle-low position compared to other EU member states [39-40]. A recent survey for 2002 showed that about 50% of Spaniards are satisfied with both hospital and ambulatory care, which are perceived to have improved over the last ten years. Citizens seem to be satisfied with the proximity of primary care centres and with the treatment they receive from practitioners. More than 50% of citizens perceived differences between urban and rural areas, and 38% perceived that decentralisation has improved health care quality [41].

Choice as a non-clinical outcome has traditionally been conferred as a low priority by the public authorities. However, some ACs have recently introduced free choice of GP (Andalusia, and Catalonia within primary care teams), a maximum waiting time before allowing public-financed patients freely access private practice (in Castilla-La Mancha), and several other choice-related provisions that have been approved both at the regional and central levels, such as the possibility of a second specialist opinion in the Canary islands (later exported to other regions), and the introduction of freedom of choice of GP within urban areas in the INSALUD network, in charge of managing 10 ACs.

### **Policy implications and future scenarios**

This paper has sought to examine the developments of the Spanish NHS over the last two decades, when both devolution and NHS consolidation simultaneously took place. Besides the absence of 'ideal data', the study has scrutinised existing evidence on regional diversity, efficiency and inequality in the Spanish NHS. Our findings support the view that Spain has decentralised the health system without significantly weakening social cohesion. Although the time span to fully respond to inequity concerns is still very short, our results suggest that despite some heterogeneity being perceived amongst some citizens [5, 41], there is no comprehensive support for the thesis that devolution in itself has increased inequality in the access to health care in the Spanish Health System. Furthermore, the decentralisation of health care has driven health care reform by transferring financial risks to more politically and fiscally accountable regions. That is, has brought some policy innovation [4,5] and has fostered quality improvements, at least with regard to patients' satisfaction [5]. Nevertheless, a key policy issues refer to the development of decentralisation processes further up to the clinical level (e.g., improving clinical management practices) and transfer of risk to the local health providers.

The Spanish NHS holds some other important challenges. First, improving information systems to allow a more efficient coordination e.g., integration of health and social care. At present, chronically ill patients get different treatments and are faced with different user

charges, depending on whether they access the system through acute care services (free of charge) or social long term care (with hotel co-payments). Second, the system needs a re-design of incentives systems to promote provider networks for care management on a continuous patient ground, which implies financing providers on a population basis instead of paying an unconnected set of miscellaneous fragmented health care activities. Third, improving public participation through the involvement of local authorities in health care provision may be needed in order to guarantee the consistency and financial sustainability of some health policies. Public health authorities should increasingly employ performance management objectives as an operative tool to deal with specific population health targets. Spanish health policy still lacks a more explicit - both social and democratic - use of priority setting mechanisms following the lines of some 'citizen' entitlement to public services (waiting perhaps for an European NICE and an EU package of rights). Finally, some consensus needs to be reached to remove public health care from the continuous electoral battle, although the former seems far away on the political horizon.

## References

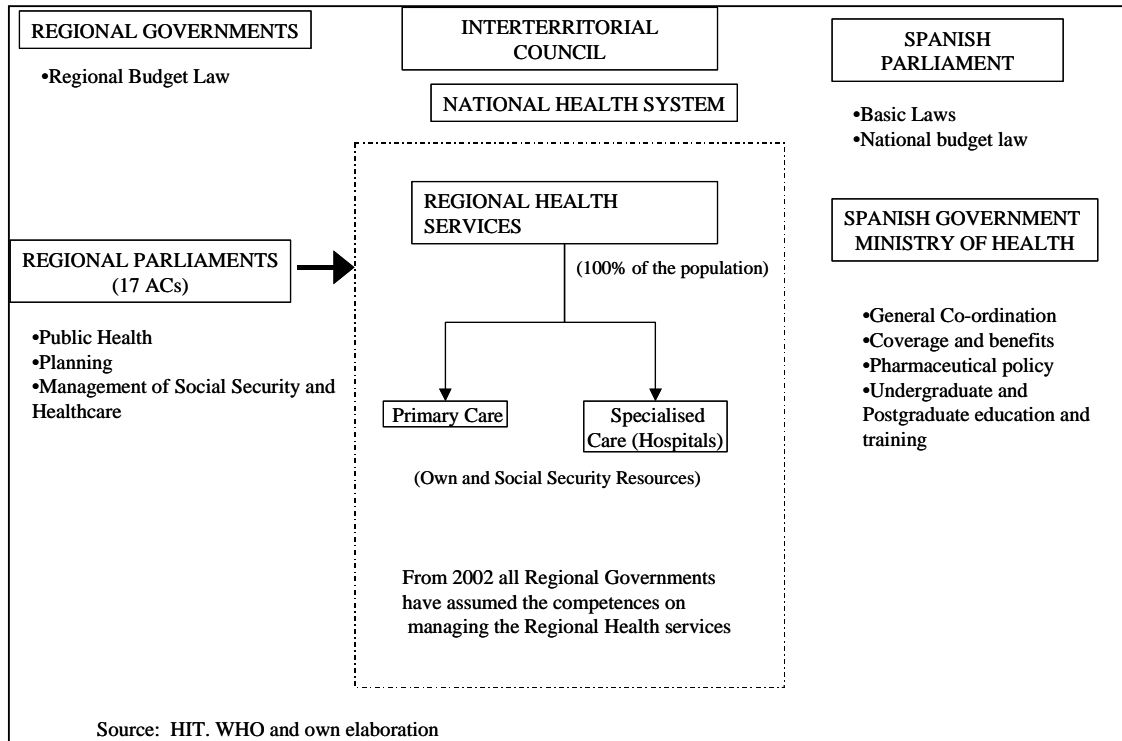
- [1] Rico, A and Sabes, R. *Health Care Systems in Transition: Spain*. European Observatory on Health Care Systems, 2000.
- [2] G.López-Casasnovas (ed.) In *La evaluación de las políticas de servicios sanitarios el Estado de las Autonomías. Análisis comparativo de las Comunidades Autónomas del Andalucía, Cataluña y el País Vasco*. Bilbao: Fundación BBV e Institut d'Estudis Autonomics. 2001
- [3] Powell, M and Boyne, G. The Spatial strategy for Equality and the Spatial Division of Welfare. *Social Policy and Administration*, 35: 181-194, 2000.
- [4] Rico, A and Costa-Font, J. *Power rather than path? The dynamics of health care federalism and the building of the Spanish NHS*. *Journal of Health Policy, Politics and Law* 2005 (in press).
- [5] Lopez, G., Costa-Font, J. and Planas, I. Diversity and regional inequalities: assessing the outcomes of the Spanish 'system of health care services', Faculty of Economics and Business, Working Paper No 745, Universitat Pompeu Fabra, 2000.
- [6] Giannoni, M and Hitiris, T. The regional impact of health care expenditure: the case of Italy. *Applied Economics* 34 (14): 1829 - 1836, 2002.
- [7] Lopez-Casasnovas G, Rico A. Decentralization: part of the health system problem or the solution? *Gac Sanit*. 2003 Jul-Aug;17(4):319-26
- [8] Lopez-Casasnovas, G. Devolution of health care in Spain to the regions becomes a reality. *Eurohealth (2002)* 8 (3): 36-38.
- [9] Eddy van Doorslaer , Adam Wagstaff et al. The redistributive effect of health care finance in twelve OECD countries. *Journal of Health Economics* 18 1999 291–313.
- [10] Costa-Font, J and Garcia, J. 'Demand for Private Health Insurance: How Important is the Quality Gap?' *Health Economics* 12: 587-599 (2003).
- [11] Jofre-Bonet, M (2000). Public health care and private insurance demand: the waiting time as a link. *Health Care Management Science*, 3: 51-71
- [12] Del Llano J et al. *Sistema de Información Sanitaria en España*. Fundación Gaspar Casal, Madrid, 2004
- [13] López Casasnovas, G .1998. Financiación autonómica y gasto sanitario público en España. *Papeles de Economía Española.*, 76: 2-14.
- [14] Barea J et al. *Análisis económico de los gastos públicos en sanidad y previsión de los recursos necesarios a medio plazo*. Instituto de Estudios Fiscales. Mº de Economía y Hacienda. Madrid. 1993.
- [15] Blanco A. and de Bustos A. *El gasto sanitario público en España: Diez años de Sistema Nacional de Salud*. April 1996. Working Paper Dirección General de Planificación. Ministerio de Economía y Hacienda. Madrid
- [16] López- Casasnovas, G and Casado, D. La financiación de la sanidad pública española: aspectos macroeconómicos e incidencia en la descentralización fiscal. *Presupuesto y Gasto Público* 20/1996 123-152
- [17] Pellisé, L., Truylol, I., Blanco, A. and Sánchez-Prieto, F. Financiación sanitaria y proceso transferencial, G.López-Casasnovas (ed.) In *La evaluación de las políticas de servicios sanitarios el Estado de las Autonomías. Análisis comparativo de las Comunidades Autónomas del Andalucía, Cataluña y el País Vasco*. Bilbao: Fundación BBV e Institut d'Estudis Autonomics. 2001.



- [18] Martínez, E. Las deducciones en el IRPF por gasto sanitario privado: situación actual y posibilidades de reforma. *Papeles de Economía Española* 1998, 76: 273-283.
- [19] López-Nicolás A, "Unobserved Heterogeneity and Censoring in the demand for Health Care" in *Econometric Analysis of Health Data* Eds AM Jones, O O'Donnell (John Wiley & Sons) pp 181-188, 2002.
- [20] López G and M. Sáez, A (2001) *multilevel analysis on the determinants of regional health care expenditure*. Faculty of Economics and Business, Working Paper No 572 Universitat Pompeu Fabra
- [21] González, B. and P. Barber. Changes in the efficiency of Spanish public hospitals after the introduction of program-contracts, *Investigaciones Económicas* 1996, XX,3:377-402.
- [22] Casado D. and López Casasnovas G., *Vejez, dependencia y cuidados de larga duración*. Colección de Estudios Sociales 2001. Fundació La Caixa.
- [23] Puig-Junoy, J. Los Mecanismos de Copago en Servicios Sanitarios: Cuando, Cómo y Porqué. Hacienda Pública Española 2001.
- [24] Gonzalez, B et al (2001). Organización y Gestión. In Lopez-Casnovas, G and Rico, A (eds). Evaluación de las políticas de Servicios Sanitarios en el estado de las Autonomías. Fundación BBV, pp 15-233 (Tomo II).
- [25] Moya-Ruiz C, Peiró S, Meneu R. (2002) Effectiveness of feedback to physicians in reducing inappropriate use of hospitalization. *Int J Qual Health Care*; 14: 305-312 and Meneu R. *Variabilidad de las decisiones médicas y su repercusión sobre las poblaciones*. Colección Economía de la Salud y Gestión Sanitaria. Dir. Vicente Ortún. Ed. Masson. S.A. Barcelona. 2002.
- [26] Sarriá A and Sendra JM. Diferencias regionales en la utilización hospitalaria. *Gaceta Sanitaria* 1993; 7:63-69
- [27] Compañ L, Peiró S, and Meneu R. Variaciones geográficas en hospitalizaciones quirúrgicas en ancianos: una aproximación a partir de la Encuesta de Morbilidad Hospitalaria. *Revista de Gerontología* 1995; 5:166-170.
- [28] Sarriá A and García P. Diferencias en la utilización de hospitales en las Comunidades Autónomas de Madrid y Cataluña *Gaceta Sanitaria* 1996;10:12-17.
- [29] Meneu R. Repercusiones económicas de la variabilidad en la práctica médica. En: Necesidad Sanitaria, Demanda y Utilización. XIX Jornadas de Economía de la Salud. Zaragoza: Asociación de Economía de la Salud 1999,383-389.
- [30] Calonge S and Manresa A. *Incidencia Fiscal y del Gasto Público Social sobre la Distribución de la Renta en España y sus CC.AA*. Fundación BBV. Bilbao.2001.
- [31] Urbanos, RM, 2000. Desigualdades sociales en salud y efectividad potencial de las políticas públicas: un estudio aplicado con datos españoles. *Hacienda Pública Española*, 154: 217-238.
- [32] Urbanos, R, 1997. Measurement of inequality in the delivery of public health care: evidence from Spain (1997). Working Paper FEDEA 2001, 2001-15.
- [33] Puig-Junoy, J (2004). Genéricos: el precio de ser referencia. *Revista de Gestión Clínica y Sanitaria*, 20: 47-50.
- [34] Costa-Font, J and Puig-Junoy, J (2004). *Regulatory Ambivalence and the Limitations of Pharmaceutical Policy in Spain*. Faculty of Economics and Business, Working Paper No 762, Universitat Pompeu Fabra
- [35] Ortún V, Gispert R. Exploración de la mortalidad prematura como guía de política sanitaria e indicador de calidad asistencial. *Med Clin (Barc)* 1988;90:399-403
- [36] Rodríguez, M Calonge, S and Reñé, J. Equity in the finance and delivery of health care in Spain. Van Doorsaler, E ;Wagstaff, A and Rutten, F (eds). *Equity in the finance and delivery*

- of health care. An international perspective.* Oxford University Press, pp 201-218. University Press, New York. pp 31-64. 1993.
- [37] Urbanos R. La prestación de los servicios sanitarios públicos en España: cálculo y análisis de la equidad horizontal interpersonal para el período 1987-1995. *Hacienda Pública Española* 2000, 153-2: 139-160.
- [38] Benach, J Borrell, C and Chamizos, O. 1999. Desigualdades sociales en mortalidad en áreas pequeñas en España. Informe Sociedad Española de Salud Pública y Administración Sanitaria.
- [39] Blendon R.J., Minah K, and Benson, JM The Public versus the World Health Organization on health system performance, *Health Affairs*, vol.20, N°3, May-June 2001.
- [40] Mossialos, E. Citizens' view on health systems in the 15 Member states of the European Union, *Health Economics* 1999, Vol. 6, 109-116.
- [41] The Spanish Department of Health. Barómetro Sanitario, several years. [www.msc.es](http://www.msc.es)
- [42] CESM, (1999).El numero de médicos en España en el próximo siglo y sus repercusiones laborales, Fundación Confederación Estatal de Sindicatos de Médicos, 2nd edition nov.1999

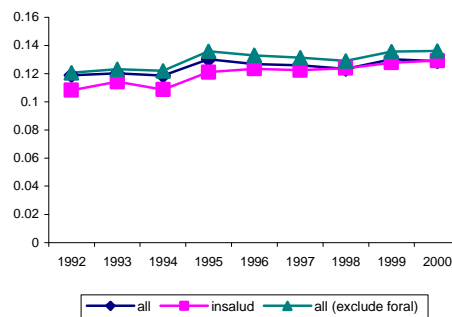
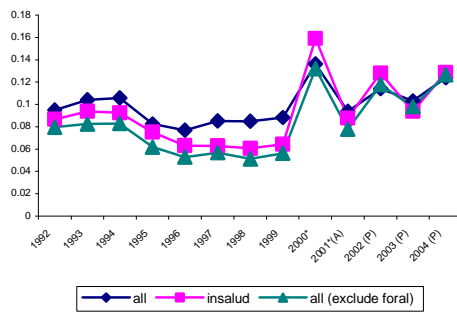
**Figure 1 Organisational structure of the Spanish National Health System**



**Figure 2 Inter-regional inequalities in health and health care (Coefficient of variation of public health expenditure per capita and in health indicators by AC)**

**2.1 CV (Public Health Expenditure p.c)**

**2.2 CV Mortality rates**



Source: own calculations.

**Table 1. Health Expenditure in Spain 1995–2001**

|                            | 1995   | 1996   | 1997   | 1998   | 1999   | 2000   | 2001   |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|
| <b>Public Expenditure</b>  |        |        |        |        |        |        |        |
| Million €                  | 24,125 | 25,686 | 26,877 | 28,616 | 30,681 | 32,671 | 35,131 |
| % Total                    | 72.3   | 72.4   | 72.5   | 72.3   | 72.2   | 71.7   | 71.5   |
| % GDP                      | 5.5    | 5.5    | 5.4    | 5.4    | 5.4    | 5.4    | 5.4    |
| <b>Private Expenditure</b> |        |        |        |        |        |        |        |
| Million €                  | 9,262  | 9,774  | 10,176 | 10,978 | 11,831 | 12,866 | 13,987 |
| % Total                    | 27.7   | 27.6   | 27.5   | 27.7   | 27.8   | 28.3   | 28.5   |
| % GDP                      | 2.1    | 2.1    | 2.1    | 2.1    | 2.1    | 2.1    | 2.1    |
| <b>Total Expenditure</b>   |        |        |        |        |        |        |        |
| Million €                  | 33,387 | 35,460 | 37,053 | 39,594 | 42,512 | 45,537 | 49,118 |
| % Total                    | 100    | 100    | 100    | 100    | 100    | 100    | 100    |
| % GDP                      | 7.6    | 7.6    | 7.5    | 7.5    | 7.5    | 7.5    | 7.5    |

Source: Ministerio de Sanidad y Consumo, 2003.

**Table 2. Decomposition of the determinants of total Health Expenditure growth 1993-2001**

| Years                | 1993   | 1994   | 1995   | 1996  | 1997   | 1998  | 1999   | 2000 <sup>P</sup> | 2001 <sup>P</sup> |
|----------------------|--------|--------|--------|-------|--------|-------|--------|-------------------|-------------------|
| Total                | 6.83%  | 3.26%  | 5.67%  | 6.47% | 4.63%  | 6.14% | 7.31%  | 6.34%             | 7.48%             |
| Ageing               | 0.81%  | 0.79%  | 0.77%  | 0.78% | 0.83%  | 0.93% | 1.09%  | 1.33%             | 1.41%             |
| Utilisation          | 5.09%  | -0.44% | 0.85%  | 1.39% | 2.36%  | 2.25% | 3.42%  | 1.65%             | 2.61%             |
| Medical input prices | -3.91% | -1.38% | -0.32% | 0.97% | -0.61% | 1.42% | -0.26% | -0.69%            | 0.56%             |
| General inflation    | 4.93%  | 4.34%  | 4.32%  | 3.21% | 2.01%  | 1.41% | 2.2%   | 3.96%             | 2.71%             |

Source: own calculation using Pellisé *et al*(2001) [15] methodology (base case), P refers to provisional.

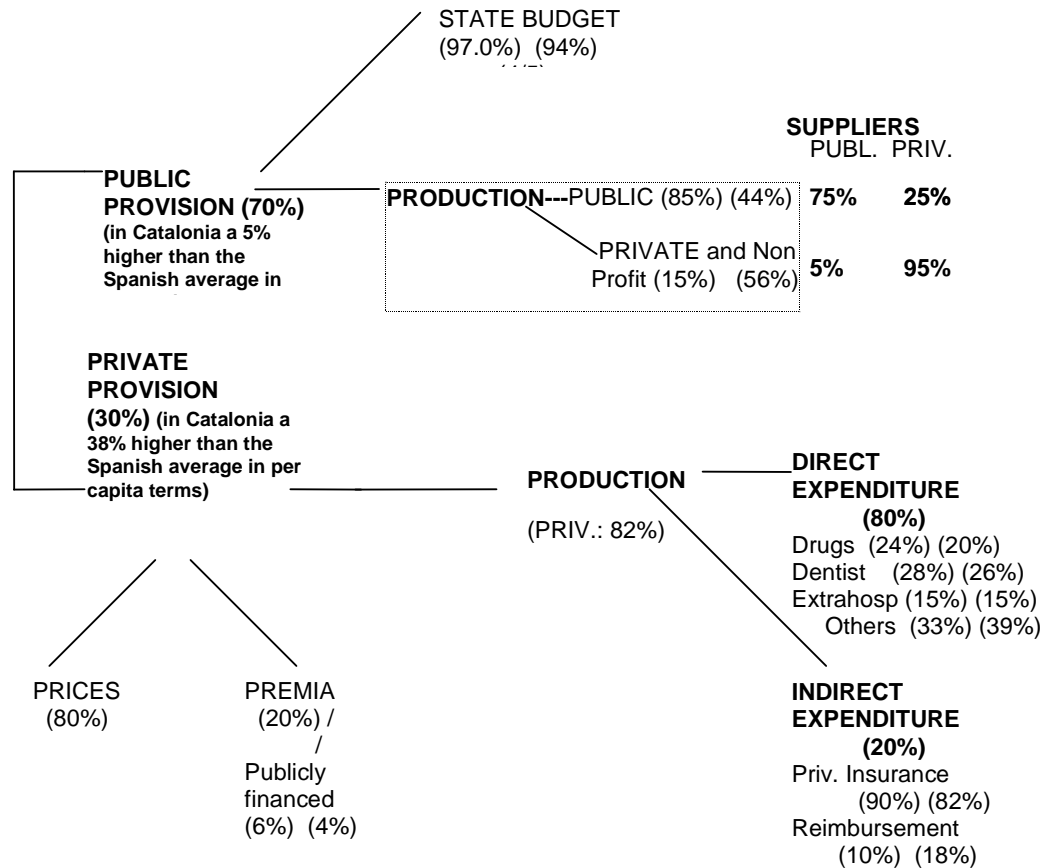
**Table 3. Life expectancy by age gender and AC**

|                           | 1980 | 1990 | 1995 | 1999* |
|---------------------------|------|------|------|-------|
| Females at birth – Years  | 78.6 | 80.4 | 81.5 | 82.4  |
| Females at age 65 – Years | 17.9 | 19.1 | 19.8 | 20.5  |
| Males at birth – Years    | 72.5 | 73.3 | 74.3 | 74.9  |
| Males at age 65 – Years   | 14.8 | 15.4 | 16.0 | 16.4  |

|                       |      |       |       |       |
|-----------------------|------|-------|-------|-------|
| Total at birth- Years | 75.6 | 76.9  | 77.9  | 78.7  |
| Andalusia             | 74.5 | 76    | 76.9  | 77.46 |
| Canary Islands        | 74.2 | 76    | 77.3  | 77.6  |
| Catalonia             | 76.9 | 77.3  | 78.2  | 79.1  |
| Valencia              | 74.9 | 76.3  | 77.2  | 78    |
| Galicia               | 75.2 | 76.6  | 77.8  | 78.8  |
| Navarre               | 75.3 | 78.1  | 79    | 79.9  |
| Basque C.             | 75   | 77.2  | 78    | 79    |
| INSALUD-10            | 75.5 | 77.24 | 78.15 | 78.9  |

*Source* : MSC, 2002 \*Data on AC life expectancy refers to the latest from 1998.

**Appendix 1. Overview of the Spanish NHS (first figure in bracket) and the Catalan Health Service (second in bracket). Last data available: 2000**



*Key words: Finance refers to the revenue sources; provision to the service responsibilities; production, regards to who produces the service; and supply, to the inputs ownership. Prices can be identified with direct expenditure and premia with indirect expenditure. Source: own elaboration, from different sources. In the second bracket, similar figure for the region of Catalonia, with the most different idiosyncratic model of health care.*