

Assessing The Model For Allocation Of Resources In Primary Care (2002-2007)

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1. INTRODUCTION

Health Expenditure

The allocation of resources between different levels of care is one of the three strategic functions of the Serviço Nacional de Saúde (SNS), together with overall investment in health care and the actual provision of services. In 2006 the portuguese expenditure on health reached 10.2% of GDP, a figure above the 9.2% European (E.U. 15) average for that year.

Table 1 – Funding Structure by Service Groups (SNS)					
	2002	2003	2004	2005	2006
ARS	43,6%	50,3%	46,5%	43,6%	47,2%
Hospitais	52,2%	46,4%	46,6%	45,5%	48,7%
Outros	4,2%	3,3%	6,9%	10,9%	4,1%

Source: ACSS, SNS – Relatório e Contas 2006

2. METHODOLOGY

The Model

The funding for Primary Care through ARS, developed from a model of redistribution of resources on a per capita basis, introduced in its design various factors of adjustment as an approximation of real population health needs for this level of care.

In 2002 a specific model was developed that includes two adjustment factors: a demographic indicator and an indicator of burden of disease. The first considers relevant ages and sexes and the "needs" of these groups determined by consultation. In the second indicator the adjustment is based on information about a range of illnesses - diabetes, hypertension, cardiovascular conditions, rheumatic diseases, psychosocial stress, asthma, asthmatic bronchitis, chronic bronchitis and allergies.

The funding of vaccinations and hemodialysis is calculated outside the model. The amount is calculated taking into account the size of the relevant populations (age group 0 to 18 years and of hemodialysis patients) and the price of the procedures (+5 %).

Age and Sex Adjustment

The capitacional system aims to adjust the SNS population of each regional health authority, to reflect the specific needs of the local population. As such the makeup of the population with regards to age is taken into account. This assumes that the local needs will be revealed which will indicate different funding requirements.

Taking the frequency of primary care consultations as indicators of the needs of each region, statistics from the Direcção Geral de Saúde (DGS) for the following age groups were used: 0-18, 19-44, 45-64 and over 65's.

To ascertain the SNS population adjusted for age and sex,the frequency of consultations according to age and sex was calculated, by dividing the number of appointments for each group by the resident population of that group. This was followed by the ponderation of the number of consultations per capita for each group, with the national average. Finally the figures initially determined for the SNS population were adjusted by applying weights according to age and sex.

Table 2 – SNS Population Adjusted by Sex/Age

ARS	0-18			19-44			45-64			≥65			TOTAL			SNS Adjust. Initial SNS Popul.	
	M	F	MF	M	F	MF	M	F	MF	M	F	MF	M	F	MF	%	%
ARS Norte	101.938	153.256	255.194	246.027	409.727	655.754	260.722	438.901	699.623	253.155	443.085	696.239	912.449	1.567.982	2.415.432	31,7%	35,7%
ARS Centro	102.389	97.182	199.571	190.949	321.982	512.931	226.965	395.539	622.504	217.962	518.991	736.953	828.077	1.204.305	2.172.382	76,9%	75,7%
ARS LVT	122.382	116.988	239.370	267.629	377.318	644.947	294.710	452.082	746.792	298.721	548.309	847.030	913.362	1.495.295	2.408.657	31,0%	31,0%
ARS Alentejo	15.252	14.385	29.637	25.035	40.187	65.222	34.553	70.773	104.826	81.318	135.932	217.250	156.158	289.757	446.915	5,5%	4,5%
ARS Algarve	14.299	13.773	28.072	14.763	24.737	39.500	21.989	38.337	58.306	35.451	56.322	91.773	96.492	131.189	217.681	2,9%	3,0%
TOTAL	416.349	395.588	811.937	685.063	1.243.169	1.928.165	819.759	1.382.732	2.201.491	989.698	1.702.249	2.691.947	2.906.719	4.724.508	7.631.227	100%	100%

ARS Alentejo	15.252	14.365	29.817	25.935	40.187	65.222	34.553	70.273	104.606	81.318	135.932	217.250	158.158	260.757	418.915	5,9%	4,5%
ARS Algarve	14.299	13.773	78.077	14.763	24.737	39.902	21.989	36.337	58.306	35.451	96.242	91.773	86.482	131.189	217.651	2,9%	3,0%
TOTAL	418.349	395.508	818.917	685.003	1.243.569	1.588.962	818.759	1.382.732	2.201.491	988.608	1.702.249	2.988.957	2.908.719	4.724.508	7.831.227	100%	100%

3. RESULTS

As this is a redistributive model, in which the total value is an external figure, the weight of each region was analyzed over an extended period, 2000 to 2007. The introduction of new adjustment factors in 2003 yielded virtually no change in the relative weight of each region in relation to previous year.

Also, for relevant period, there were no significant variations in the weight of the primary care budget initially allocated to each region, with exception of the Central region. Here there was an increase in the weight of the initial budget allocated between 2000 and 2004 (from 24.6% to 29.3%), overtaking the North region. This was due to the fact that in 2004, the only year when the overall funding for health decreased, the Central region had a substantially lower decrease than other regions.

Table 5 - Primary Health Care: Funding Evolution (Initial Budget)

ARS	2000			2001			2002			2003			2004			2005			2006			2007		
	Value (€)	Weight %	Evol. %	Value (€)	Weight %	Evol. %	Value (€)	Weight %	Evol. %	Value (€)	Weight %	Evol. %	Value (€)	Weight %	Evol. %	Value (€)	Weight %	Evol. %	Value (€)	Weight %	Evol. %	Value (€)	Weight %	Evol. %
ARS Norte	450.462.744	29,3%		662.351.179	47,0%	30,1%	662.996.640	0,1%	29,5%	693.921.072	4,7%	29,5%	589.887.293	-15,0%	28,8%	680.581.250	16,7%	29,5%	961.480.306	39,6%	30,2%	1.007.309.496	4,8%	30,2%
ARS Centro	379.133.364	24,6%		579.862.114	32,3%	26,2%	620.552.028	7,0%	27,6%	648.263.112	4,5%	27,6%	599.498.236	-7,5%	29,3%	646.019.519	7,8%	27,6%	821.122.656	27,1%	25,8%	880.042.352	4,7%	25,8%
ARS LVT	547.630.756	35,6%		748.638.344	38,7%	34,0%	751.578.426	1,7%	33,5%	792.897.705	4,1%	33,8%	682.267.865	-14,0%	33,3%	786.845.634	15,3%	33,7%	1.070.535.869	36,1%	33,6%	1.121.574.169	4,8%	33,6%
ARS Alentejo	100.521.084	6,5%		132.580.795	31,9%	6,0%	129.127.080	-2,6%	5,7%	135.447.060	4,9%	5,8%	115.285.635	-14,9%	5,6%	134.201.717	16,4%	5,7%	195.943.743	46,0%	6,2%	205.285.104	4,8%	6,2%
ARS Algarve	62.132.364	4,0%		77.786.350	25,2%	3,5%	73.474.956	-5,5%	3,3%	77.861.940	6,0%	3,3%	61.775.135	-20,7%	3,0%	81.017.358	31,1%	3,5%	134.230.107	65,7%	4,2%	140.397.048	4,6%	4,2%
Total	1.539.900.312	100%		2.201.638.782	42,3%	100%	2.247.529.140	2,1%	100%	2.348.390.460	4,5%	100%	2.048.644.124	-12,8%	100%	2.336.665.478	14,1%	100%	3.193.312.681	36,2%	100%	3.334.608.168	4,6%	100%

4. CONCLUSION

It would be advisable to update and develop this funding model by introducing new refinements, such as new geo-demographic variables (i.e. index of Aging and Addiction). This would offer a more finely tuned system of primary health care funding that better reflected the current status and health needs of the population, and met the desired outcomes in health care.

Aim Of The Analysis

Primary Care, which is targeted at the entire population, plays a major role in health care as a whole, and takes up a significant portion of the total funding allocated to the SNS, equivalent to the amount spent in hospital services.

The aim of this analysis is to evaluate the impact of different adjustment factors (i.e. sex / age and burden of disease) in the allocation of resources to primary care, for each Health Authority (ARS).

Burden of Disease Adjustment

This adjustment aims to integrate the health status of a local population in redistributing resources to a regional health authority.

The diseases considered were chronic diseases treated predominantly in outpatient services: diabetes, hypertension, rheumatic diseases, psychosocial stress, asthma, asthmatic bronchitis, chronic bronchitis and allergies. The estimates of the average costs were based on an adjusted billing (efficient costs), which attempted to fine-tune the billing of drugs to the real needs of the population by eliminating the inefficiency resulting from over-prescription. This thereby ensured that billing per capita for each disease in a state of efficiency did not differ substantially from region to region.

After calculating the billing per capita for each disease the mean and standard deviation were determined, as well as the difference between them. To calculate the average of the 3 lowest costing regions, it was guaranteed that no per-capita bills were entered that were lower than the average less standard deviation. The total turnover of drugs, adjusted for the relative efficiency of the regions, is obtained by multiplying the average costs for each disease by the number of patients as determined by the National Health Survey (INS). The SNS population adjustment by burden of disease is obtained by applying a percentage of the cost of the medicine distributed for each region to the SNS initial population.

Table 3 - SNS Population Adjusted by Burden of Disease

ARS	Initial SNS Population		SNS Adjusted Population	
	Number	Weight (%)	Number	Weight (%)
ARS Norte	2.683.900	35,2%	2.361.520	31,0%
ARS Centro	1.959.502	25,7%	2.140.920	28,1%
ARS LVT	2.359.964	31,0%	2.476.555	32,3%
ARS Alentejo	342.382	4,5%	405.559	5,3%
ARS Algarve	275.323	3,6%	236.517	3,1%
TOTAL	7.621.071	100%	7.621.071	100%

Methodology Application in 2003

In 2003 this methodology was applied, which used a historical figure corresponding to 40% of the initial funding in 2002 and a capitacional component of 60%. This maintained a 50%/50% relationship in all capitacional adjustments (sex / age and the burden of disease).

Other adjustments were also incorporated, such as the use of provisional data from the 2001 Census to determine the resident population for each region, with implications for the adjustments according to "age and sex" and "burden of disease". Adjustments made also involved the number of General Practitioner consultations for the age groups over 19, and the updates of prices and number of patients to calculate the vaccination and hemodialysis components.

Table 4a - Methodology Application in 2003

Total Funding	Historical Value (40%)	Vaccination and Hemodialysis Cost	Adjusted Funding	Sex/Age Adjustment	Burden of Disease Adjustment
(1)	(2)	(3)	(4)	(5)=(2+3+4)	(6)=(5)*50%
2.386.524.057	913.558.416	44.933.262	142.854.705	1.285.177.674	642.588.837

Table 4b - Methodology Application in 2003

ARS	Historical Value (40%)	Vaccination and Hemodialysis Funding	Capitacional Value	Total with ULIS*	Total without ULIS*
ARS Norte	278.745.420	52.882.206	399.317.027	732.054.653	693.921.072
ARS Centro	248.220.810	39.054.657	368.987.641	648.263.108	648.263.108
ARS LVT	304.551.375	76.764.622	411.581.283	792.897.280	792.897.280
ARS Alentejo	51.650.811	12.025.938	71.776.284	135.447.054	135.447.054
ARS Algarve	29.389.980	6.950.543	41.521.440	77.861.963	77.861.963
TOTAL	913.558.416	181.781.967	1.285.177.875	2.386.524.058	2.348.390.477

*Unidade Local de Saúde de Matosinhos

Chart 1 – Evolution of the Weight of Health Authorities (ARS) in funding

