

# A Huge Increase in Ambulatory Surgery Practice in Portugal

P. Lemos

## Abstract

The Portuguese Association of Ambulatory Surgery (APCA) publishes the data from its fifth national survey on ambulatory surgery regarding surgical activity performed in 2009. Sixty hospitals were involved representing all national surgical public hospitals, including the Autonomous Regions of Madeira and the Azores. A total of 583,278 operations were performed, representing an increase of 22.5% in comparison to our last survey in 2005. All hospitals have already a day surgery programme running, which allows a national rate of 43.7% of non-emergency surgery performed on a day surgery basis (179,646 major operations in a total of 411,173 non-emergency operations performed), doubling the 22% obtained in 2005. There are 22 hospitals (36.7%) with percentages higher than 50% of day surgery in comparison with only 2 hospitals registered in 2005. Ambulatory surgery (AS)

nationally is homogeneously developed in all regions of the mainland: North (46.7%), Middle (41.5%), Lisbon and Tejo Valley (42.4%), Alentejo (50.1%) and Algarve (64.0%). The Autonomous Region of Madeira and the Azores, although with results below the ones obtained in the mainland, have a positive evolution with 26.7% and 17.4%, respectively. The Final Report of the National Committee for the Development of Ambulatory Surgery in Portugal (CNADCA) published in October, 2008, and the subsequent approval of its proposals by the Health Ministry were critical for the results obtained, foreseeing a national result of over 50% of procedures on a day surgery basis during 2010, allowing Portugal to be amongst the same performance of the majority of the industrialised countries in this field.

**Keywords:** Ambulatory surgery; Portuguese data; Trends in day surgery.

**Authors' addresses:** Consultant Anaesthetist, Department of Anaesthesiology, Centro Hospitalar do Porto, 4099-001 Porto, Portugal. Past President of the Portuguese Association of Ambulatory Surgery (APCA). President the International Association for Ambulatory Surgery.

**Corresponding author:** P. Lemos E-mail : paulo.f.lemos@netcabo.pt.

## Introduction

Activity on a day surgery basis began in Portugal in the mid 90's. The evolution of this practice has been slow due to the poor support of the Portuguese government for this surgical regimen. By 2005, just 22.0% of all non-emergency surgical activity was performed on a day surgery basis [1]. In 2007, with the nomination of a National Committee for the Development of Ambulatory Surgery (CNADCA) and the publishing of several proposals towards an effective nationwide expansion approved by the Health Ministry [2], Portugal seemed to face a new era in this surgical field. With the purpose of evaluating the impact of these governmental incentives, the Portuguese Association of Ambulatory Surgery (APCA) started a new national survey and these results are presented in this paper.

## Methods and Material

The fifth national survey on ambulatory surgery (AS) undertaken by APCA in partnership with CNADCA and the Health Secretary of State, was sent in March 2010 to the electronic address of the Head of Management of all public hospitals. The survey requested data of the surgical activity performed in 2009, and information related to the organisation and clinical indicators of the day surgery programmes.

## Results

Sixty public hospitals were included in the present survey which represent the total hospitals with surgical activity in Portugal, including the Autonomous Regions of the Azores and Madeira. The total results from the surgical activity are presented in Table 1. There was a general increase in the performance of surgical activity,

**Table 1** Total surgical activity in the 60 public hospitals during 2009 & 2005.

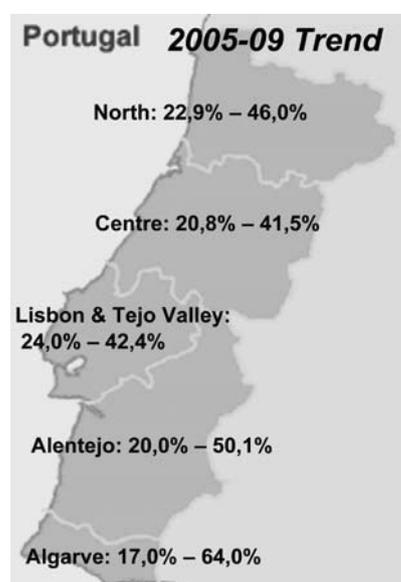
Surgical Activity	Surgical Regimen	No. Surgeries		Difference
		2009	2005	
Normal surgical activity		517,588	450,174	15.0%
- Non-emergency surgery	Inpatient Surgery	(231,527)	(268,721)	- 13.8%
	Ambulatory Surgery	(179,646)	(75,935)	136.6%
- Emergency surgery		(106,415)	(105,518)	0.9%
SIGIC – Additional production		65,690	26,064	152.0%
<b>TOTAL</b>		<b>583,278</b>	<b>476,238</b>	<b>22.5%</b>

**Table II** Surgical procedures performed on a day basis in 2009 and evolution of day surgery practice in the last 8 years by Health Region (excluded SIGIC – additional production).

Health Regions	Number of Hospitals	Surgical Patients Performed on a Day Basis				
		2009		2005	2003	2001
		Number	% <sup>1</sup>	% <sup>1</sup>	% <sup>1</sup>	% <sup>1</sup>
<b>North ARS</b>	16	66,293	46.7	23.3	13.6	8.6
<b>Centre ARS</b>	17	32,369	41.5	20.6	17.4	7.8
<b>Lisbon &amp; Tejo Valley ARS</b>	17	64,206	42.4	24.1	14.7	5.6
<b>Alentejo ARS</b>	4	7,706	50.1	20.0	17.5	1.8
<b>Algarve ARS</b>	2	6,122	64.0	17.0	16.9	13.7
<b>Autonomic Region of Madeira</b>	1	1,519	26.7	21.0	0.0	0.2
<b>Autonomic Region of Azores</b>	3	1,431	17.4	0.0	0.0	0.0
<b>TOTAL</b>	<b>60</b>	<b>179,646</b>	<b>43.7</b>	<b>22.0</b>	<b>14.7</b>	<b>7.1</b>

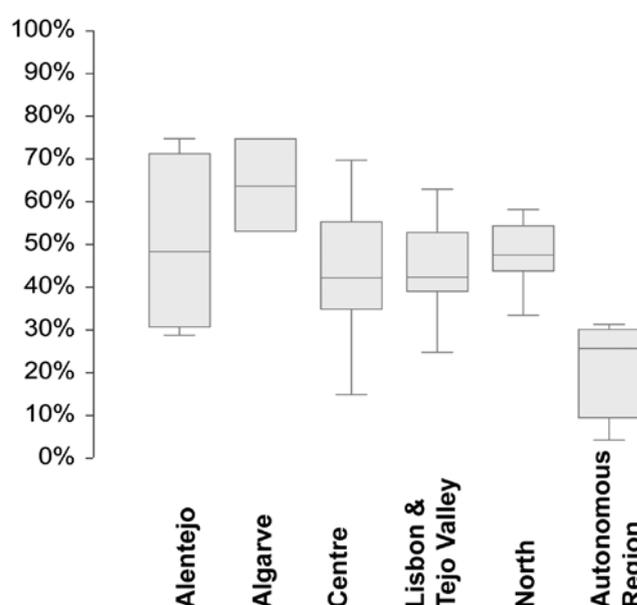
<sup>1</sup>percentage based on the total of non-emergency surgery.

especially in patients operated on a day surgery basis. Non-emergency inpatient surgery was the only sector that has been reduced from 2005 to 2009. The growth of ambulatory surgery in the country has increased steadily since 2001 in the different health regions of Portugal (Table II). Although with a fewer number of hospitals, Algarve and Alentejo (with just 2 and 4 hospitals, respectively) in the south of the country are the health regions where ambulatory surgery has the highest day surgery rates. Figure 1 shows the homogeneous development of ambulatory surgery throughout the whole country. In terms of absolute figures the North is the most representative health region with more than one third of the total national day surgery performed in its hospitals and with the lowest variance of performance amongst the hospitals (Graph 1). The basket of the most frequent surgical procedures performed on an ambulatory surgery basis showed an impressive increase too, doubling the rate from 30% (2005) to 60% (2009) of all non-emergency procedures (Table III). Of note is the increase in cataract surgery that is now performed on a day surgery basis in more than 90% of cases. Three in each four carpal tunnel operations are performed in a day surgery setting representing the second most frequent procedure after cataract surgery. The next most frequent procedures are inguinal hernia repair and varicose vein surgery, both representing just about 40% on a day surgery basis, almost three times more than in 2005. But the development in day surgery in Portugal is also reflected by an increase in more complex surgery (Table IV). Of note is the increase in the following three



**Figure I** Trend in Ambulatory Surgery rates between 2005 and 2009 in all Public Surgical Hospitals, by Health Region (excluded SIGIC – additional production).

**Graph I** Percentage of ambulatory surgery by Health Region in 2009.



Health Regions	1st Quartil	Median	3rd Quartil	Variance
Alentejo	34.5%	48.6%	64.3%	4.5%
Algarve	58.5%	63.9%	69.3%	2.3%
Centre	35.1%	42.5%	54.4%	4.0%
Lisbon & Tejo Valley	39.5%	42.6%	52.4%	1.8%
North	43.8%	47.8%	53.7%	0.5%
Autonomous Regions	20.0%	25.9%	27.8%	1.4%
<b>Total</b>	<b>36.5%</b>	<b>43.8%</b>	<b>53.6%</b>	<b>2.6%</b>

procedures: abdominoplasty (16.2%), laparoscopic cholecystectomy (15.8%) and thyroid lobectomy (15.7%).

The promotion of ambulatory surgery in Portugal was associated with the development of basic (Table V) and desirable criteria (Table VI) in the organisation of AS programmes. These criteria were considered critical to carry out quality in the AS healthcare services and were officially published by the Portuguese Government [3].

**Table III** Evolution of the most frequent procedures (Group A) performed on a day surgery basis between 2005 & 2009.

Group A Surgical Procedures	2009			2005			% Difference Amb/ Total (2009-2005)
	Ambulatory	Total	%Amb / Total	Ambulatory	Total	%Amb / Total	
Knee arthroscopy	731	4,004	18.3	167	3,807	4.4	13.9
Arthroscopic meniscus	545	2,899	18.8	73	2,083	3.6	15.2
Surgical removal of tooth	1,202	1,775	67.7	635	2,019	49.6	18.1
Cataract	64,104	70,374	91.1	16,494	30,171	53.9	37.2
Inguinal hernia repair	6,694	17,541	38.2	3,020	16,518	18.0	20.2
Dilatation and curettage of uterus	2,917	8,654	33.7	2,478	11,332	21.9	11.8
Varicose veins	5,691	14,082	40.4	1,121	9,426	11.9	28.5
Tonsillectomy	3,198	9,491	33.7	946	6,342	14.9	18.8
Adenoidectomy without tonsillectomy	2,088	4,023	51.9	1,034	3,813	27.1	24.8
Myringotomy with tube insertion	2,807	5,202	54.0	1,039	3,631	28.6	25.4
Endoscopic female sterilisation	1,087	2,539	42.8	768	2,660	28.9	13.9
Squint	946	1,760	53.8	838	1,643	51.0	2.8
Rhinoplasty	593	4,430	13.4	169	2,639	6.4	7.0
Local excision of breast	1,672	4,196	39.8	1,204	3,654	33.1	6.7
Haemorrhoidectomy	1,143	3,019	37.9	401	2,279	17.6	20.3
Pilonidal cyst	2,550	4,283	59.5	1,496	3,938	38.0	21.5
Circumcision	4,012	5,304	75.6	1,795	3,984	45.1	30.5
Dupuytren's contracture	736	1,720	42.8	133	555	24.0	18.8
Carpal tunnel release	9,292	12,115	76.7	4,754	9,508	50.0	26.7
Orchidectomy + -pexy	1,141	2,149	53.1	102	1,905	31.8	21.3
Male sterilisation	153	207	73.9	90	247	41.3	32.6
Repair of deform. on foot	688	3,064	22.5	389	2,317	3.9	18.6
Removal of bone implants	1,307	4,767	27.4	389	4,495	8.7	18.7
Baker's cyst	(1,091)	(1,722)	63.4				
Legal abortion	(2,083)	(3,254)	64.0				
Sphincteroplasty / Anal fistulectomy	(649)	(972)	66.8				
Urinary female incontinence	(316)	(3,093)	10.2				
Hysteroscopy	(4,630)	(5,688)	81.4				
<b>TOTAL<sup>1</sup></b>	<b>117,391</b>	<b>193,458</b>	<b>60.7</b>	<b>40,561</b>	<b>133,568</b>	<b>30.4</b>	<b>30.3</b>

<sup>1</sup> excluded the 5 last procedures for allow proper comparison between 2005 and 2009.

**Table IV** Evolution of the less frequent procedures (Group B) performed on a day surgery basis between 2005 & 2009.

Group B Surgical Procedures	2009			2005			% Difference Amb/ Total (2009-2005)
	Ambulatory	Total	%Amb / Total	Ambulatory	Total	%Amb / Total	
Thyroid lobectomy	243	1,549	15.7	99	1,764	5.6	10.1
Laparoscopic cholecystectomy	1,739	11,030	15.8	738	8,190	9.0	6.8
Laparoscopic antireflux	12	241	5.0	28	352	8.0	- 3.0
TURP	221	1,581	14.0	156	1,647	9.5	4.5
Hysterectomy (LAVH)	8	440	1.8	0	257	0.0	1.8
Repair of cysto- and rectocele	278	2,259	12.3	57	2,148	2.7	9.6
Lumbar microdiscectomy	149	2,092	7.1	98	2,475	4.0	3.1
Cruciate ligament repair	42	601	7.0	19	440	4.3	2.7
Bilateral breast reduction	44	560	7.9	45	499	9.0	- 1.1
Mastectomy	112	1,421	7.9	78	2,445	3.2	4.7
Abdominoplasty	174	1,076	16.2	114	710	16.1	0.1
<b>TOTAL</b>	<b>3,022</b>	<b>22,850</b>	<b>13.2</b>	<b>1,432</b>	<b>20,927</b>	<b>6.8</b>	<b>6.4</b>

The percentage of the hospitals that confirm both basic and desirable criteria can be seen in Graph 3 and Graph 4 respectively. Hospitals from different health regions, with exception of the Autonomous Regions (Madeira and the Azores), seem to accomplish the majority of criteria. In the North this finding is more consistent with a low variance amongst hospitals.

## Discussion

AS has had a huge increase in the last few years in Portugal due to the multiple initiatives developed by a National Committee (CNADCA) and the Portuguese Association for Ambulatory Surgery (APCA) in the promotion of this surgical regimen that were confirmed by the policies established by the Health Ministry. The results were surprising. The national rate doubled in only four years, from 22.0% in 2005 to 43.7% in 2009. The rate is close to the magic barrier of 50% of all non-emergency surgery, a target defined by CNADCA in its final report [4].

The increase of AS practice is the result not only of an important number of new cases but also the transfer of patients from the inpatient to the AS setting. This surgical regimen not only allowed in Portugal additional surgical production but also a reduction in the inpatient setting, with a consequent reduction in the surgical waiting list. It is interesting to note that this phenomenon happened all over the country in a homogeneous way. It seems from the results that Portugal has reached a consolidation of its ambulatory surgery practice, attracting all partners for their involvement, even the more resistant ones.

It is important to notice that:

- i) Ophthalmology, namely cataract surgery became a paradigm of

AS programmes, representing now more than 90% of all non-emergency surgery;

- ii) 22 hospitals (36.7%) have AS practice with rates over 50%, in comparison with just 2 hospitals in 2005;
- iii) all hospitals in the mainland have surgical activity on a day surgery basis (in 2005, 7 hospitals had no AS activity at all) and only 4 hospitals have rates below 30% of its non-emergency surgery;
- iv) surgery with higher complexity is being more and more included in AS programmes, reflecting the increase in diversity of day surgery activity in Portugal.

This last indicator is an important factor reflecting an increase of interest, motivation and satisfaction among the multi-professional teams involved in AS programmes.

Nevertheless, there are negative facts that must be pointed out. In some hospitals the AS concept has profound organisational deficits where the time for discharge is the only substantial difference between the inpatient and the outpatient settings. The innovative character of AS depends on its organisational model being patient centred and based on a separate flow from inpatients allowing an increased throughput of patients in a more efficient, effective and safe surgical environment. Bearing this in mind the Portuguese health policymakers publish basic and desirable organisational criteria in order to promote an increase in quality of AS programmes [3]. The majority of public hospitals made a great effort aimed at their implementation when compared to data from 2006 [4]. In fact, the majority of basic organisational criteria exist in more than 80% of public hospitals. The exception is the monitoring of clinical indicators and the availability of a phone contact from one member of the team where we found lower percentages. The former, that includes cancellation of booked procedures and unplanned overnight admissions, are critical for the evaluation of efficiency and safety in AS programmes, respectively [5]. The latter, is fundamental taking

**Table V** Basic criteria in the organisation of ambulatory surgery programmes.

A. Basic criteria	Description
<b>A1. Patient flow</b>	Sequence: admission > preparation room > operating room > post-anaesthetic care unit (PACU) > second stage recovery room > home discharge (with the exception of the operating room and the PACU that might be shared in integrated facilities, all area should be independent from the inpatient circuit)
<b>A2. DS in the Hospital Organisation</b>	Recommendation for the inclusion in the hospital organigram of a ambulatory surgery programme with an official nomination of a co-ordinator / Director, and schedule of an exclusive operating surgical time for this programme
<b>A3. Patient Selection and Discharge Criteria</b>	Establishment of clinical guidelines for patient selection and discharge criteria in the ambulatory surgery programme
<b>A4. Clinical Information</b>	Oral and written information with instructions for the post-operative period should be given to each patient and relatives at the home discharge.
<b>A5. Production and clinical indicators</b>	Namely cancellation of booked procedures (failure to attend and cancellation after arrival) and unplanned overnight admission
<b>A6. Post-operative support: phone contact</b>	An emergency phone contact for a member of the team should be given to each patient operated on in a day surgery programme
<b>A7. Post-operative support: phone call in the 24 h after surgery</b>	A phone call should be made in the 24 hours after surgery

into consideration the actual legis artis for AS [6]. Regarding the desirable organisational criteria it is difficult to accept that only 25.0% of the hospitals involved in this survey have a separate flow from inpatients or have no independent facilities for those patients who have to overnight in the hospital. This means that many of the advantages associated with AS programmes, namely the reduced risk of hospital acquired infections are lost [7]. Other criteria, like additional clinical indicators or patient satisfaction are seldom used in those AS programmes, explaining why there is a long way to go in the qualitative improvement of AS practice in the Portuguese public hospitals.

## Conclusion

The present survey clearly shows a huge increase in AS practice in Portugal in the past few years. However, the author believes that there is still progress to be made, not only in surgical production where it is feasible to reach higher rates in the near future, but also in the quality improvement of the organisation of our AS programmes.

With the recent creation by the Portuguese Government of a promotional package for the development of AS in the country, Portugal anticipates having higher rates in this surgical regimen and thus having further benefits from the clinical, economic and social advantages that AS offers. Portugal will be offering more and better healthcare for its citizens.

## Acknowledgement

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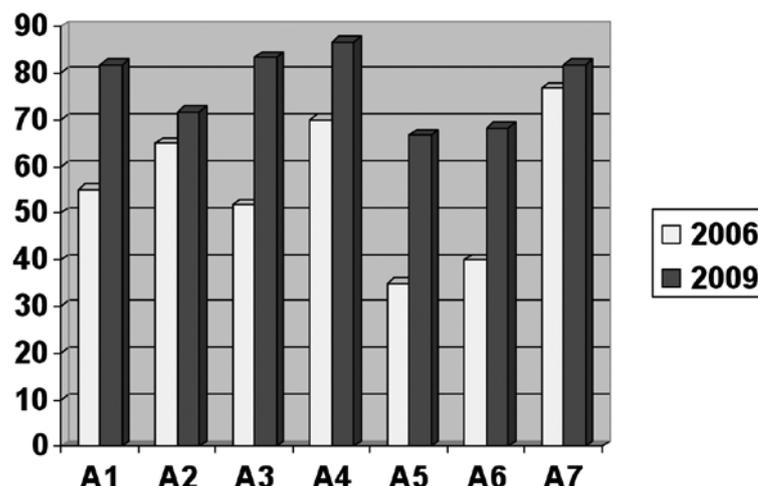
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**Table VI** Basic criteria in the organisation of ambulatory surgery programmes.

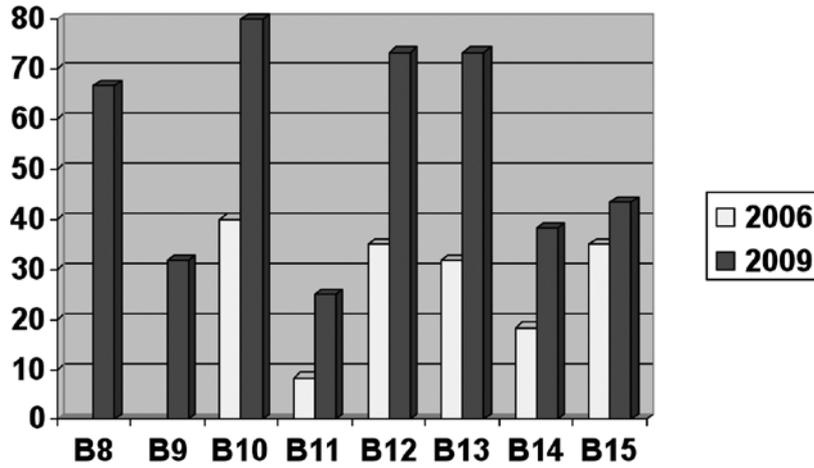
B. Desirable criteria	Description
<b>B8. Increase in the AS rate</b>	Increase in the AS rate (based on the total of the non-emergency surgery) in a mean value of 15% per year, during 3 years
<b>B9. Reduction in the number of the surgical beds</b>	Reduction in 5–10%, per year, during three years in the number of the surgical beds
<b>B10. Patient flow in every situation of the hospital</b>	As described in the criteria A1
<b>B11. Logistic for patients and relatives</b>	Exclusive spaces for patients and relatives of the AS programme, especially waiting room before surgery and independent wards for patients who are included in programmes with overnight stay
<b>B12. Human resources</b>	Nurse, administrative and auxiliary staff should be exclusive to the AS programme
<b>B13. Clinical Guidelines</b>	Development of clinical guidelines especially in the pre-operative screening tests and for post-operative pain control and nausea and vomiting prophylaxis
<b>B14. Continuous monitoring of clinical indicators</b>	Continuous monitoring of clinical indicators such as unplanned return to the operating room in the same day of surgery or unplanned return or readmission to the DSU or hospital within 30 days after surgery
<b>B15. Patient satisfaction</b>	Evaluation of patient and relatives satisfaction, through anonymous questionnaires

**Graph 2** Percentage of hospitals that confirm the Basic Criteria and evolution between 2006 and 2009.



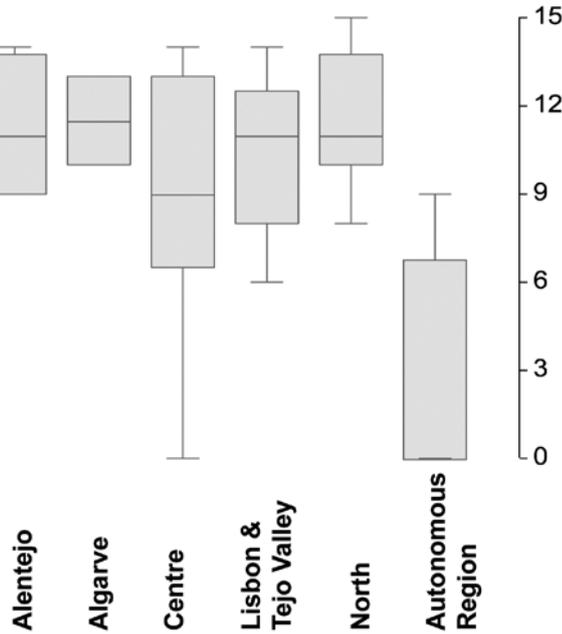
	A1	A2	A3	A4	A5	A6	A7
<b>2006</b>	55,0%	65,0%	51,7%	70,0%	35,0%	40,0%	76,7%
<b>2009</b>	81,7%	71,7%	83,3%	86,7%	66,7%	68,3%	81,7%

**Graph 3** Percentage of hospitals that confirm the Desirable Criteria and evolution between 2006 and 2009.



	B8	B9	B10	B11	B12	B13	B14	B15
<b>2006</b>	n.i.	n.i.	40,0%	8,3%	35,0%	31,7%	18,3%	35,0%
<b>2009</b>	66,7%	31,7%	80,0%	25,0%	73,3%	73,3%	38,3%	43,3%

**Graph 4** Accomplishment of Basic & Desirable Criteria, by Health Region in 2009.



Health Regions	1st Quartil	Median	3rd Quartil	Variance
Alentejo	9.0	11.0	13.3	6.92
Algarve	10.8	11.5	12.3	4.50
Centre	7.0	9.0	13.0	14.78
Lisbon & Tejo Valley	9.0	11.0	12.0	16.47
North	10.0	11.0	13.3	4.40
Autonomous Regions	0.0	0.0	2.3	20.25
<b>Total</b>	<b>8.0</b>	<b>11.0</b>	<b>13.0</b>	<b>16.10</b>