Endocrinology in Portugal - Census 2016. Board of the Portuguese College of Endocrinology and Nutrition of the Portuguese Medical Association

A Endocrinologia em Portugal - Censo 2016. Direção do Colégio de Endocrinologia e Nutrição da Ordem dos Médicos

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ABSTRACT

Introduction: On September 2016, the Board of the College of Endocrinology and Nutrition of the Portuguese Medical Association carried out a national survey, about all Endocrinology, Diabetes and Metabolism Departments of the public hospitals included in the Portuguese National Health Service and a simplified version of this survey was sent to all endocrinologists working in Portugal and registered with the Portuguese Medical Association.

Material and Methods: Data related to organizational and human resources were collected, reporting the situation by the end of year 2015. The census registered 107 individuals and 27 Departments.

Results: The ratio of endocrinologists-population was 1.4, much lower than in the other European countries (varies between 2 to 4), resulting in alarming shortages of services in some areas of Portugal and in worse quality indicators.

Discussion: These data suggest that actions should be taken to increase the number of endocrinologists and departments in the country.

Conclusion: In recent years, the number of residents has significantly increased, which will make it possible to correct this situation.

Keywords: Endocrinology; National Health Programs; Portugal

RESUMO

Introdução: A Direção do Colégio de Endocrinologia e Nutrição da Ordem dos Médicos realizou um inquérito nacional em setembro de 2016, a todos os serviços de Endocrinologia, Diabetes e Metabolismo dos hospitais do Serviço Nacional de Saúde e uma versão simplificada do mesmo foi enviada a todos os endocrinologistas a trabalhar em Portugal e inscritos no colégio.

Material e Métodos: O censo inclui dados organizacionais e de recursos humanos relativos ao fim do ano de 2015. Registou 107 respostas individuais e 27 serviços.

Resultados: O *ratio* de endocrinologistas por 100 000 habitantes era de 1,4, muito inferior a outros países europeus (varia de 2 a 4), que resulta numa carência grave de serviços em algumas zonas do País e em piores indicadores de qualidade.

Discussão: Estes dados indicam que devem ser implementadas medidas para aumentar o número de endocrinologistas e serviços em Portugal.

Conclusão: Nos últimos anos, o número de internos tem vindo a aumentar, o que vai permitir melhorar esta situação.

Palavras-chave: Endocrinologia; Portugal; Serviço Nacional de Saúde

INTRODUCTION

An endocrinologist specializes in issues relating to the morphofunctional characteristics of the endocrine system, as well as to the hormonal and biochemical regulation of synthesis, release, transport and action mechanisms in tissues and metabolic effects of hormones.

Highly and increasingly prevalent disorders such as type-2 diabetes mellitus, overweight and obesity, thyroid diseases and lipid metabolic diseases are within the scope of endocrinology. Nodular thyroid and adrenal diseases, incidentally discovered sellar masses (pituitary 'incidentalomas'), osteoporosis and phosphocalcic metabolism abnormalities are more frequently diagnosed today due to the technological improvements and an improved access to diagnostic tests; a differentiated approach aimed at cost reduction is required to prevent from unnecessary therapeutic procedures, in addition to the adequate treatment of more complex and frequently underdiagnosed or undervalued situations.

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In addition, a multidisciplinary approach to more rare disorders leading to poor outcomes in terms of morbidity and mortality is required, involving a more difficult diagnosis and therapy in which the endocrinologist has a crucial coordinating role.

The number of registered endocrinologists has increased significantly in Portugal over the past few years, allowing for an improved equity regarding the access to specialised care, even though great asymmetries still exist. General Practitioner (GP) referral to endocrinologists has a crucial role due to the increased prevalence of endocrine disorders as well as to the differentiated approach required by rare endocrine disorders in which poor outcomes can be avoided with timely diagnosis and treatment. An easy access to the specialty is recognised as very relevant by patients and GPs who are usually responsible for the identification of these patients, as well as regarding indicators of quality as well as access to healthcare, productivity and efficiency. The disparity in current Portuguese ratio of endocrinologists per 100,000 when compared to the rest of Europe and the regional inequalities regarding the access to the specialty raises the need for an urgent update of training requirements, as well as for the opening of new departments and for an improvement of the existing departments in order to allow for an upgrade to the level of other European countries towards the desired integration into European Reference Networks.

A national survey based on the National Census of Endocrinology and Nutrition (*Censo de Endocrinologia e Nutrição*) has been carried out by the Board of the Portuguese College of Endocrinology and Nutrition (*Colégio de Endocrinologia e Nutrição*) aimed at the identification of the number of endocrinologists licensed to practice in Portugal, their form of organization, clinical productivity and current needs of each department.

MATERIAL AND METHODS

This study was based on a survey sent by email to the heads of departments in public hospitals in Mainland Portugal and the Autonomic Regions of Azores and Madeira within the Portuguese National Healthcare Service (*Serviço Nacional de Saúde* [SNS]) organised following corporate or private management models, including the three regional hospital centres of the *Instituto Português de Oncologia* and the two military hospitals, involving 27 different departments of endocrinology.

An abbreviated survey has been sent by email or by post (whenever an email address was unavailable) to each of the 272 physicians registered with the Portuguese College of Endocrinology and Nutrition.

Surveys were sent on September 5, 2016 asking for responses regarding the situation on December 31, 2015 and results were validated on September 30, 2016. A total of 107 completed individual surveys and 27 department surveys were received.

RESULTS

Individual questionnaire

Mean age of 50.6 years was found in registered members with the College of Endocrinology and Nutrition having completed the questionnaire (range 31-78 years), 47% under the age 50 and 66% female. A bimodal distribution (shown in Fig. 1) with ages clustered around 30-35 and 50-60 has been found, explained by an increased training capacity over the past few years and by an increased training period during the eighties. Only up to 20 candidates were allowed entry into the Endocrinology and Nutrition specialty in 2016.

Data on physicians' medical career level (n = 105) and workplace (n = 104) are shown in Table 1.

Nearly 51% of physicians are licensed to practice in the SNS and to work in the private sector (50.9%) and 25.9% exclusively in the SNS. A percentage of 20% of the endocrinologists work as senior graduate consultants and 49% as graduate consultants, while only 13.5% are working in the SNS as senior graduate consultants, reflecting the absence of calls for tender over the past few years.

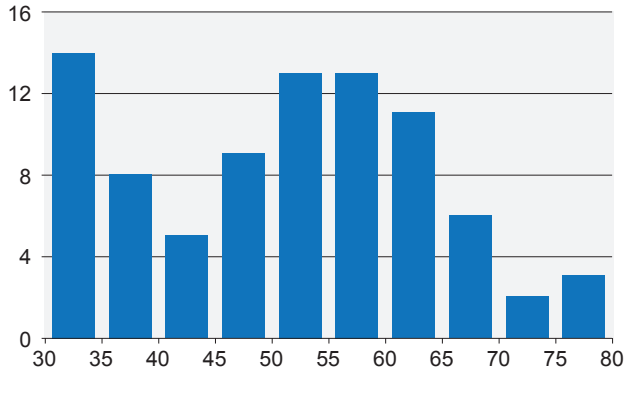

Figure 1 – Age of endocrinologists

Table 1 – Medical career level and workplace

	Medical career level			Total
Workplace	Consultant	Graduate consultant	Senior graduate consultant	
SNS	10	13	5	28
Private Medicine	4	7	5	16
Both	19	28	6	53
Does not practise	--	1	--	1
Other	--	3	3	6
Total	33	55	23	

A 40 hours/week individual labour contract was mostly described by all the physicians in the study (29.1%) as well as by those working both in the SNS and in the private practice (24.2%), while a 42 hours/week exclusivity contract (17.4%) was more frequently described by physicians licensed to practice only in the SNS.

Labour contracts are shown in Fig. 2 and according with the workplace (Table 2).

The levels of satisfaction with the current practice as well as the perception of the future of endocrinology were also assessed with the questionnaire. Responses were scored on a scale ranging from zero (dissatisfied or unpromising future) to five (very satisfied or promising future).

An average score of 3.6 regarding the satisfaction with the practice in the area of endocrinology has been found, i.e. physicians were moderately satisfied and senior graduate consultants were among the most satisfied (Fig. 3). A slightly lower average score (3.1) has been found as regards the future of the specialty (Fig. 4) and graduate consultants were the most disappointed.

Questionnaire aimed at the heads of department

A total of 27 completed questionnaires (25 from SNS hospitals and two from the military hospitals in Porto and in

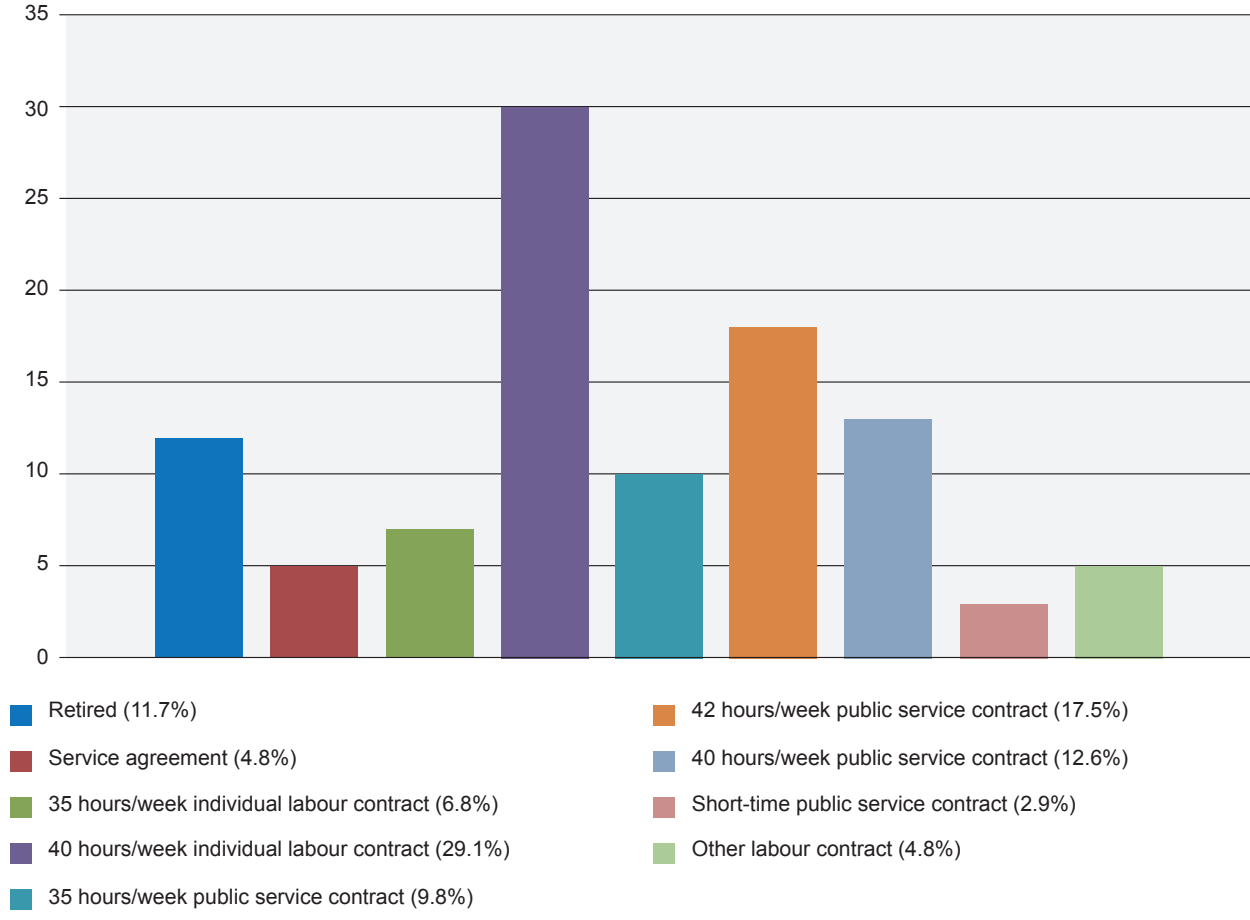

Figure 2 – Labour contract

Table 2 – Labour contract

	SNS	Private medicine	Both
Retired	0	8	2
Service agreement	0	6	0
35 hours/week individual labour contract	0	3	5
40 hours/week individual labour contract	9	0	23
35 hours/week public service contract	0	0	11
42 hours/week public service contract	16	0	0
40 hours/week public service contract	2	0	12
Short-time public service contract	0	0	4
Other labour contract	2	3	2

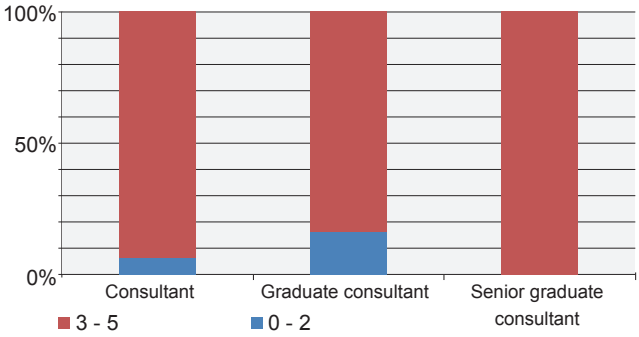

Figure 3 – Personal satisfaction with the current practice in endocrinology and with the medical career level

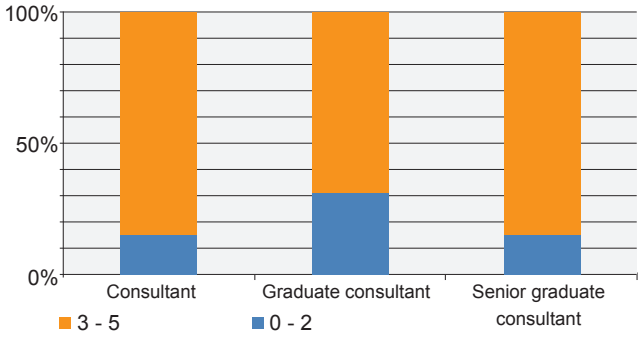

Figure 4 – Perception of the future of endocrinology

Lisbon) were received and their distribution is shown in Fig. 5.

Worrying regional inequalities (north *vs.* south and coast *vs.* interior regions) have been found regarding the access to endocrinology specialised care, with a relevant impact on health indicators, as shown by the Annual Report of the National Diabetes Observatory (*Observatório Nacional da Diabetes*)[1] in which significantly higher major and minor lower limb amputation rates were found in the Southern regions, as well as longer mean length of stay in the hospital and higher percentage of hospital admission due to diabetes ketoacidosis. Such a wide variation in patient's proximity to healthcare facilities is a serious equity failure of the Portuguese National Healthcare Service (*Serviço Nacional de Saúde*).

The lack of any endocrinology department in the Algarve and in the interior regions where universities including the medicine course exist has also a tremendous impact on training of future doctors in such a relevant specialty such as endocrinology and nutrition.

Healthcare activity

Clinical practice in endocrinology is mostly focused on the outpatient activity, even though an important inpatient clinical practice aimed at diabetes management has been described by most departments, due to the large number of patients admitted with diabetes, as well as an inpatient practice aimed at the diagnosis and treatment of other endocrine pathologies and at the day clinic, allowing for the management of decompensated diabetes without the need for admission to the hospital, with relevant cost reductions. Day clinics also allow for the development of endocrine dynamic function testing involving drug administration, response monitoring and close monitoring of possible adverse effects, apart from other procedures. Emergency on-duty or on-call medical attendance is also provided by some departments mainly aimed at diabetes-related admissions, due to its prevalence and also at the approach to more rare endocrine emergencies involving a more demanding management.

More and more Complementary Diagnosis and Treatment Tests (*Meios Complementares de Diagnóstico e Terapêutica* – MCDTs) have been used due to the improvements in medicine and particularly in endocrinology: thyroid ultrasound, ultrasound-guided fine-needle thyroid aspiration biopsy, body composition assessment, direct cooperation in the inferior petrosal sinus and adrenal vein sampling, continuous glucose monitoring, continuous subcutaneous insulin infusion systems, among others.

Outpatient clinic

Outpatient clinical practice represents the main activity of the endocrinology departments. Outpatient clinical productivity data are shown in Table 4, according with the information provided by the heads of department. Different accounting criteria regarding multidisciplinary medical activity seem to have been used by the institutions and can explain for some discrepancies. Differentiated outpatient clinics have been developed in some departments, due

Table 3 – Type of healthcare assistance

	Number of departments	Percentage
Outpatient clinic	27	100%
Endocrinology ward	8	30%
Other department's ward	14	52%
Day clinic	20	74%
Inpatient care	25	93%
MCDTs	27	100%
Shift work - Emergency Department	8	30%
Emergency on-call	9	33%

MCDTs - Complementary Diagnosis and Treatment Tests (Meios Complementares de Diagnóstico e Terapêutica)

Figure 5 – Distribution of the Departments of Endocrinology

Table 4 – Outpatient productivity

	First consultations	Total medical consultations
Centro Hospitalar de São João, E.P.E.	4,380	24,441
Centro Hospitalar do Porto, E.P.E.	3,351	25,208
Centro Hospitalar Entre Douro e Vouga, E.P.E.	180	800
Centro Hospitalar Tâmega e Sousa, E.P.E.	1,447	4,256
Centro Hospitalar Trás os Montes e Alto Douro, E.P.E.	3,302	1,013
Centro Hospitalar Vila Nova Gaia – Espinho, E.P.E.	2,720	11,825
Hospital de Braga, P.P.P.	2,400	13,500
IPO do Porto, E.P.E.	1,162	5,950
ULS Matosinhos, E.P.E.	1,215	6,141
ULS do Alto Minho, E.P.E.	2,986	6,914
Hospital Forças Armadas, Porto	112	1,951
Centro Hospitalar de Leiria, E.P.E.	2,237	6,755
Centro Hospitalar do Baixo Vouga, E.P.E.	1,866	8,650
Centro Hospitalar e Universitário de Coimbra, E.P.E.	Unavailable data	22,531
IPO de Coimbra, E.P.E.	1,047	7,554
ULS de Castelo Branco, E.P.E.	Unavailable data*	Unavailable data*
Centro Hospitalar Lisboa Central, E.P.E.	4,207	22,387
Centro Hospitalar de Lisboa Ocidental, E.P.E. (Egas Moniz)	3,015	15,202
Centro Hospitalar de Setúbal, E.P.E.	1,159	7,371
Centro hospitalar Lisboa Norte, E.P.E.	4,538	21,467
Hospital Garcia de Orta, E.P.E.	1,973	10,241
IPO de Lisboa, E.P.E.	1,720	13,458
Hospital Beatriz Ângelo, Loures, P.P.P.	1,765	7,545
Hospital Forças Armadas, Lisboa	941	6,212
Centro Hospitalar do Algarve, E.P.E.	617	1,819
Autonomous Regions		
Hospital do Divino Espírito Santo - Açores	2,308	15,606
Hospital Central do Funchal - Madeira	873	5,924
Total	49,232 17.7% first consultations Average: 1,969	277,010 Average: 10,654

* The department opening occurred in 2016 and 2015 data were still unavailable

Table 5 – Differentiated consultations (number of departments and percentage)

Obesity	Obesity surgery	Thyroid pathology	Pituitary gland pathology	Pregnancy	Lipids	Type-1 diabetes	Type-2 diabetes	Insulin infusion systems	Eating behaviour
15 (56%)	12 (44%)	19 (70%)	11 (41%)	22 (81%)	2 (7%)	19 (70%)	20 (74%)	12 (44%)	2 (7%)
Paediatric endocrinology	Adrenal pathology	Calcium and bone	Sexual medicine	Diabetic foot	Andrology/ menopause	Thyroid oncology	Neuro-endocrine tumours	Pituitary gland tumours	Other
10 (37%)	6 (22%)	3 (11%)	4 (15%)	11 (41%)	2 (7%)	15 (55%)	6 (22%)	12 (44%)	8 (30%)

to the high number of patients and / or the need for a differentiated management of certain pathologies (due to its complexity or low prevalence), as shown in Table 5.

Inpatient care units

Diabetes mellitus is the most frequent cause for admission, as primary or secondary diagnosis. Other patients with cancer and rare or complex disorders, in need for a multidisciplinary approach, are also admitted to the unit.

Hospital discharges and average lengths of stay are shown in Table 6, including a comparison between departments with their own ward or with inpatient care units in other department's wards.

Lower average length of stay has been found in endocrinology departments when compared to the national

average (10.4 days) (data from the *Observatório Nacional da Diabetes*)[1] corresponding to a relevant cost reduction for the SNS.

Day clinic

Day clinic activity allowed for the management of decompensated diabetes, other endocrine disorders (preventing from the need for hospital admission), onset of intravenous therapy, therapeutic education (crucial in the treatment of patients with diabetes) and diagnostic hormone testing and therapy administration, with the need for medical monitoring.

This activity currently exists in 74% of the departments, with a mean 512 sessions throughout 2015 (range 6 – 2,109 sessions).

On-call duty

An increased number of diabetes-related hospital discharges and admissions have been found over the past few years, showing an 89.3% increase between 2005 and 2014 and reflecting an increased prevalence of the disease. The departments of endocrinology have had a crucial role in the optimization of diabetes metabolic control, in critical situations, in post-surgery and in non-critical inpatient setting, apart from the implementation of regimens for the different clinical situations. In 2015, 93% of the departments have provided specialised inpatient care and a total 26,997 inpatient medical examinations have been performed, with a mean 1,800 medical examinations per year and department. There is however a wide variability and this corresponded to the most frequent activity for some departments (higher than inpatient clinical practice in the endocrinology ward).

Complementary Diagnosis and Treatment Tests (*Meios Complementares de Diagnóstico e Terapêutica* – MCDTs)

A major development has been found in different departments over the past few years regarding the use of thyroid ultrasound and thyroid aspiration biopsy, due to the relevant role of endocrinologists in the integration of patient's clinical manifestations with biochemical data and imaging. This is in line with the international progression in the management of thyroid pathology, namely regarding nodular thyroid disease.

The same situation has been found in other areas of medical imaging, including (i) inferior petrosal sinus and adrenal vein sampling for the determination of hormone gradients allowing for a definitive diagnosis in certain pathologies, (ii) dual-energy X-ray absorptiometry (DEXA, DXA) or bioelectrical impedance spectroscopy (BIS) for body composition measurement, with a relevant impact on overweight/obesity management, (iii) implementation of genetic testing for the treatment of certain pathologies and follow-up of the patients and families and finally (iv) continuous glucose monitoring which is crucial in the treatment with continuous subcutaneous insulin infusion systems (Table 7).

Emergency

Emergencies in Endocrinology mostly correspond to diabetes-related episodes, namely diabetes ketoacidosis, hyperosmolar hyperglycaemic state and severe hypoglycaemia.

The presence of external emergency clinical practice has been described by 17 departments (63%), on-duty by

Table 6 – Hospital productivity

	Hospital discharges	Average length of stay
Admission to the department' s ward (n = 8) Average no. of beds = 7 (range 3 - 16)	Total: 1,574 Average: 196	7.9 days (7.3 - 10.1 days)
Admission to other department's ward (n = 14; data regarding 5 departments)	Total: 146 Average: 29	5.9 days (5 - 7 days)
Total	1,767 patients	7.2 days

Table 7 – Complementary Diagnosis and Treatment Tests (*Meios Complementares de Diagnóstico e Terapêutica* - MCDTs)

	No. of departments	Percentage of departments
Dynamic testing	27	100%
Thyroid ultrasound imaging	13	48%
Ultrasound-guided fine-needle thyroid aspiration biopsy	13	48%
Palpation-guided fine-needle thyroid aspiration biopsy	5	19%
Continuous glucose monitoring	15	56%
Inferior petrosal sinus sampling	9	33%
Adrenal vein sampling	6	22%
Genetic testing	9	33%
Dual-energy X-ray absorptiometry (DEXA, DXA) for body composition measurement	4	15%
Bioelectrical impedance spectroscopy (BIS) for body composition measurement	10	37%

eight and on-call by nine, mostly on a 12 hours/week shift schedule and over 24-hour on-call shift schedule described by three departments.

Endocrinology registrars have a participation in on-duty internal medicine emergency in five hospitals and also with inpatient activity in an internal medicine ward in four, with 12 hours/week shift schedule and related to internal medicine training within the internship program. This may explain for the lack of a specific endocrinology emergency unit in certain regions.

Endocrinology specialty internship

In 2015, 18 departments achieved accreditation for specialty training (67%), 14 of which achieved fully accreditation (52%) and four departments were partially accredited (15%) and a total of 71 registrars (first to fifth-year) attended specialty training programs. Over the initial four years of their training program, registrars must have complied with no more than 12 hours/week shift schedule in the emergency department, according with the training program in endocrinology and nutrition, described by the publication of the Ordinance (*Portaria*) no. 1/2014, 2 January; fifth-year registrars should attend an emergency training exclusively at the endocrinology department through the final year of their training, according with this internship program.

Registrar's specific training in endocrinology and nutrition, their workload and supervision by consultants is shown in Table 8.

The fact that fifth-year registrars are still working in the internal medicine clinic at the emergency department should be mentioned, affecting their specific training in endocrinology and nutrition and in contrast to the specialty training program apart from the fact that only half of these had any supervision by consultants. On-duty inpatient care in the internal medicine clinic, not included in registrar's internship is still occurring in three departments that have achieved accreditation for specialty training in endocrinology and registrars are rarely supervised by consultants in one department, corresponding to a serious issue already notified to the Portuguese College of Endocrinology and Nutrition and to the Portuguese Medical Association.

The situation is cutting across all registrars working within the different internal medicine clinics in the emergency departments, leading to different complaints and public claims and has been considered as a relevant concern by the Portuguese College of Endocrinology and Nutrition.

Medical staff

From the 27 questionnaires received by the Board of the College of Endocrinology and Nutrition, 22 regarded autonomous departments, four regarded units integrated within another department and one regarded an autonomous unit. The different medical career levels of the heads of department or unit are shown in Table 9.

Consultants or graduate consultants worked as head of

Table 8 – Endocrinology and nutrition specialist registrars working in the Emergency Department

	First to fourth-year registrars	Fifth-year registrars
Inpatient		
Number of departments	10 (56% dos serviços com idoneidade)	11 (61% of those having achieved accreditation)
Shift work (Internal Medicine – Emergency Department)		
Number of departments	16 (89% of those having achieved accreditation)	5 (28% of those having achieved accreditation)
Workload	50% with up to 12 hours/week and 50% with 12 to 24 hours/week shift schedule	100% up to 12 hours/week shift schedule
Supervision by consultant	63% always supervised, 25% most of the time and 12% rarely	60% always with supervision and 40% most of the time
On-call (Internal Medicine)		
Number of departments	3 (17% of those having achieved accreditation)	3 (17% of those having achieved accreditation)
Workload	100% with 12 hours/week	100% with 12 hours/week
Supervision by consultant	67% (2) with supervision and 33% (1) rarely supervised	67% (2) with supervision and 33% (1) rarely supervised
Endocrinology emergency		
Number of departments	3 (17% of those having achieved accreditation)	5 (28% of those having achieved accreditation)
Workload	Up to 12 hours/week (100%)	Up to 12 hours/week (100%)
Supervision by consultant	100% always supervised	40% always supervised and 60% only by phone
Endocrinology prevention clinic		
Number of departments	2 (11% of those having achieved accreditation)	3 (17% of those having achieved accreditation)
Workload	50% with up to 12 hours/week and 50% with 12 to 24 hours/week shift schedule	Up to 12 hours/week (100%)
Supervision by consultant	100% always supervised	67% always supervised and 33 % rarely supervised

Table 9 – Medical career level of the heads of department/unit

	Consultant	Graduate consultant	Senior graduate consultant	Total
Autonomous department	2	7	13	22
Integrated unit	3	1	---	4
Autonomous unit	1	---	---	1
Total	6	8	13	27

Table 10 – Medical staff and medical career levels in 2015

	Consultants*	Graduate consultants	Senior graduate consultants	Total
Centro Hospitalar de São João, E.P.E.	4	7	1	12
Centro Hospitalar do Porto, E.P.E.	2	7	4	13
Centro Hospitalar Entre Douro e Vouga, E.P.E.	2	0	0	2
Centro Hospitalar Tâmega e Sousa, E.P.E.	2	1	0	3
Centro Hospitalar Trás os Montes e Alto Douro, E.P.E.	1	0	0	1
Centro Hospitalar Vila Nova Gaia – Espinho, E.P.E.	2	2	0	4
Hospital de Braga, P.P.P.	4	1	0	5
IPO do Porto, E.P.E.	1	1	1	3
ULS Matosinhos, E.P.E.	2	2	0	4
ULS do Alto Minho, E.P.E.	4	0	0	4
Hospital Forças Armadas, Porto	0	1	0	1
Centro Hospitalar de Leiria, E.P.P.	2	0	0	2
Centro Hospitalar do Baixo Vouga, E.P.E.	3	1	0	4
Centro Hospitalar e Universitário de Coimbra, E.P.E.	5	9	1	15
IPO de Coimbra, E.P.E.	3	1	1	5
ULS de Castelo Branco, E.P.E.	1	0	0	1
Centro Hospitalar Lisboa Central, E.P.E.	2	9	1	12
Centro Hospitalar de Lisboa Ocidental, E.P.E. (Egas Moniz)	4	2	1	7
Centro Hospitalar de Setúbal, E.P.E.	0	1	1	2
Centro Hospitalar Lisboa Norte, E.P.E.	5	10	0	15
Hospital Garcia de Orta, E.P.E.	4	2	1	7
IPO de Lisboa, E.P.E.	2	2	1	5
Hospital Beatriz Ângelo, Loures, E.P.E.	2	2	0	4
Hospital das Forças Armadas, Lisboa	2	2	1	5
Centro Hospitalar do Algarve, E.P.E.	1	0	0	1
Hospital do Divino Espírito Santo - Açores	2	2	1	5
Hospital Central do Funchal - Madeira	2	1	1	4
Total	64	66	17	147

* Consultants awaiting for placement

department in fourteen departments/units, corresponding to 52% of all the departments, reflecting the slow career progression and the recent opening of new departments with younger heads of department. The number of consultants in each department is shown in Table 10.

A total of 272 endocrinology consultants have been found with this study and 147 consultants practised in the SNS and the military hospitals in Mainland Portugal and autonomous regions in 2015, regardless of the labour contract. A ratio of 1.4 endocrinologists / 100,000 has been found, considering a total number of 10,562,178 people (2011 Census) and all the endocrinologists working in the SNS and military hospitals have been included. Ratios ranging from 2/100,000 in the Northern European countries to 3-4/100,000 in Spain, France and in Italy have been found, according with the 2013 EUROSTAT data.[2] This shortage situation has a significant impact on important indicators such as diabetes mortality rate per 100,000[3]: a rate of 42.74/100,000 has been found in Portugal in 2013, significantly higher than the European average of 22.8 and

only overcome by the rate found in Turkey. More favourable indicators have been found in Spain (20.27/100,000) and in Italy (30.3).

Department shortage

Patients beyond hospital's direct attendance area attend most departments (20, or 74% of the total) due to the shortage of endocrinology departments and to the high prevalence of endocrine disorders. Staff shortage has been described by 21 departments (78%) and this is also explained by this fact. Shortage of examination rooms, ultrasound equipment, continuous glucose monitoring and continuous subcutaneous insulin infusion systems have been mostly described (by 67% of the departments). Shortage of other healthcare professionals apart from physicians has been also described.

CONCLUSIONS

Endocrinology and nutrition is under an expansion trend regarding healthcare activity as well as regarding the number of consultants and registrars. The effort in specialty training which has been developed over the past few years (67% of the departments achieved full or partial accreditation and 71 registrars currently attend internship programs) and the age of endocrinologists (47% under the age of 50) showed that only part of the Portuguese regional inequalities regarding the access to specialised care can be covered, complying with a basic right of the SNS.

Enhancement of the departments linked to teaching and undergraduate training activity (there is no endocrinology department in support of the medicine course at the *Universidade da Beira Interior* and there is only one consultant working in the *Centro Hospitalar do Algarve*) seems crucial, in addition to the enhancement of clinical academic centres and those with a relevant research activity.

Even though healthcare activity is mainly based on outpatient clinical practice, with an average 10,654 medical consultations per department throughout 2015 (17.7% first consultations) and with an active day clinic in 74% of the departments, inpatient medical care (mainly diabetes-related) also represents a relevant activity, with better average waiting time indicators than the national average, as well as taking care of patients admitted to other departments, corresponding to a total of 26,997 medical consultations in 2015 (in 93% of the hospitals), with an average 1,800 medical consultations per department.

Ultrasound-guided fine-needle thyroid aspiration biopsy has been increasingly used (in 48% of the departments), as well as dynamic testing and new technologies for diabetes management, such as continuous glucose monitoring (in 56%) and continuous subcutaneous insulin infusion systems.

Unfavourable quality indicators have been found in Portugal, with a low ratio of 1.4 endocrinologists per 100,000, significantly lower than the ratio found in the remaining European countries. This situation is explained by the shortage of endocrinologists in some Portuguese regions (interior and Southern region), with an impact on the existing departments, where patients living beyond their direct attendance area usually attend. Therefore, staff shortage to meet demand has been described by 74% of the departments, often corresponding to overlong waiting times. This will perhaps explain for the discouragement regarding the future of their specialty, particularly described by graduate consultants.

However, there is still enough training capacity to overcome current shortcomings in the short to medium term, with the subsequent positive impact on healthcare as well as the economic indicators and a crucial contribution to the differentiation of existing departments towards the desirable integration into European Reference Networks.

The Board of the College firmly believes in a promising future.

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