

Oral Healthcare

Universal Coverage

Alexandre Lourenço | Pedro Pita Barros



March 2016

Study by request of the Portuguese Dental Association

Index

INDEX	2
LIST OF TABLES	3
LIST OF FIGURES	3
LIST OF ACRONYMS	4
EXECUTIVE SUMMARY	5
1. INTRODUCTION	6
2. ORAL HEALTHCARE SERVICES IN PORTUGAL	8
2.1 EVOLUTION OF THE SYSTEM	8
2.2 RESPONSIVENESS OF THE NATIONAL HEALTH SERVICE	10
2.3 THE COMPLEMENTARITY OF THE PRIVATE SECTOR	13
2.4 THE NATIONAL PROGRAM FOR PROMOTION OF ORAL HEALTH	14
2.5 ADDITIONAL HEALTH BENEFITS	17
2.6 THE ADSE	18
3. ACCOMPLISHMENT ANALYSIS OF THE SYSTEM'S GOALS	21
3.1 FINANCIAL PROTECTION AND CONTRIBUTIVE JUSTICE	21
3.2 RESPONSIVENESS TO PEOPLE'S EXPECTATIONS	24
3.3 HEALTH LEVEL AND EQUITY	25
4. OTHER MODELS OF PROVISION OF CARE AND FINANCING	33
HEALTHCARE SYSTEMS FINANCED BY GENERAL TAXATION	33
HEALTHCARE SYSTEMS FINANCED THROUGH SOCIAL INSURANCE	34
5. EVOLUTION SCENARIOS	37
5.1 SCENARIO A: <i>STATUS QUO</i>	38
5.2 SCENARIO B: INCREASING PUBLIC COVERAGE WITH PUBLIC PROVISION	39
5.3 SCENARIO C: INCREASING PUBLIC COVERAGE WITH PRIVATE PROVISION	40
GRADUAL EXPANSION OF THE DENTIST VOUCHER	41
NETWORK OF PRIVATE PROVIDERS CONTRACTED BY THE SNS	46
REIMBURSEMENT MODEL	47
5.4 SCENARIO D: INCREASING PRIVATE COVERAGE (INSURANCE) WITH PRIVATE PROVISION	48
6. PROPOSAL NATIONAL NETWORK OF ORAL HEALTHCARE SERVICES	49
IMPLEMENTATION OF PILOT PROJECT	52
FINAL REMARKS	55
REFERENCES	58

List of Tables

Table 1. Characterization of the projects associated with the dentist voucher.	15
Table 2. Number of SNS users that benefited from the PNPSO	16
Table 3. Number of total vouchers used in the context of the PNPSO	16
Table 4. Indicators for Oral Health between 2006 and 2013.	17
Table 5. Population residing in Continental Portugal over the age of 65, in 2014.	43
Table 6. Estimate of the total number of toothless individuals and its percentage of the total population, per age group, in 2005/6.....	44
Table 7. Estimate of the financial impact of the different proposals for enlarging the coverage of the PNPSO.....	46
Table 8. Estimates of the financial impact to the SNS of applying the ADSE costs.	47
Table 9. Estimates of the financial impact to the SNS of applying ADSE costs.....	47

List of Figures

Figure 1. Relations between functions and objectives of a health system, according to the World Health Report of 2000.....	6
Figure 2. Structure of the report.	7
Figure 3. Adequacy of the quantity of equipment for oral hygiene, given the needs of the populations.....	9
Figure 4. Number of dentists belonging to the Portuguese Dental Association, per 1.000 inhabitants, NUTS III, 2014.	11
Figure 5. Ratio of population per dentist in European Union countries, 2012/3.	12
Figure 6. ADSE Beneficiaries with oral healthcare consumption.	18
Figure 7. Annual costs incurred by the ADSE with oral healthcare services between 2012 and 2014.	19
Figure 8. Annual rate of utilization of oral healthcare services by ADSE beneficiaries.	19
Figure 9. Comparison of public expenditures in oral healthcare services, 2014.....	20
Figure 10. Percentage of population facing catastrophic expenses or impoverishment expenses, according with the quintiles of income.....	22
Figure 11. Weight of the different types of healthcare services in the total of direct payments made.	23
Figure 12. Weight of the different types of healthcare direct payments, for households of the first and fifth income quintiles.....	24
Figure 13. Share of persons aged 16 and over reporting unmet needs for dental care, 2013	26
Figure 14. Share of persons aged 16 and over reporting unmet needs for dental care due to being too expensive, too far to travel or waiting lists, by age, 2013 ⁽¹⁾ (%).....	27
Figure 15. Share of persons aged 16 and over reporting unmet needs for dental care due to being too expensive, by income quintile, 2013 ⁽¹⁾ (%).....	28
Figure 16. Percentage of people over 16 years old who report having unmet healthcare needs in oral health due to these services being too costly, by quintile of income, 2013 (detail Portugal and EU).	28
Figure 17. Share of persons aged 16 and over reporting unmet needs for dental care due to being too expensive, too far to travel or waiting lists, by educational attainment level, 2013 ⁽¹⁾ (%).....	29
Figure 18. Percentage of adult population with complete natural dentition.	30
Figure 19. Percentage of adult population with over 65 years old without teeth.....	30
Figure 20. Incidence of lip cancer and oral cavity cancer in men, adjusted by age, 2012.	31
Figure 21. Mortality rate by lip cancer and oral cavity cancer in men, adjusted by age, 2012.	31
Figure 22. Three dimensions to consider when moving towards universal health coverage.	38
Figure 23. Proposal for the basic set of proximity oral healthcare services.	39
Figure 24. Proportion of residents who have paid a visit to an oral healthcare professional in Continental Portugal, in 2005/06.	42
Figure 25. Package of services (yet to be defined) for the Oral Healthcare Units (USO).....	51

List of acronyms

ACES	Agrupamento de Centros de Saúde (Regional Group of Healthcare Units)
ACSS	Administração Central do Sistema de Saúde (Central Administration of the Healthcare System)
BAS	Benefícios Adicionais de Saúde (Additional Healthcare Benefits)
CPOD	Dentes Cariados, Perdidos e Obturados (Caried, Lost and Obturated Teeth)
CSI	Complemento Solidário de Idosos (Welfare subsidy given to low-income elderly individuals)
EU	European Union
EU-SILC	<i>European Union - Statistics on Income and Living Conditions</i>
ERS	Entidade Reguladora da Saúde (Healthcare Regulatory Authority)
INE	Instituto Nacional de Estatística (National Statistics Institute - <i>Statistics Portugal</i>)
MCDT	Meios Complementares de Diagnóstico e Terapêutica (Ancillary Diagnostic and Therapy Exams)
OMD	Ordem dos Médicos Dentistas (Portuguese Dental Association)
WHO	World Health Organization
WHO-E	World Health Organization- European Regional Office
PNPSO	Programa Nacional de Promoção de Saúde Oral (National Program for the Promotion of Oral Health)
RNCSO	Rede Nacional de Cuidados de Saúde Oral (National Network of Oral Healthcare Services)
RSI	Rendimento Social de Inserção (Social Inclusion Subsidy)
SISO	Sistema de Informação para a Saúde Oral (Oral Healthcare Information System)
SNS	Serviço Nacional de Saúde – (Portuguese National Health Service)
TSS	Técnico Superior de Saúde (Senior Healthcare Technician)
UCSP	Unidade de Cuidados de Saúde Personalizados (Personalized Healthcare Units)
USF	Unidade de Saúde Familiar (Family Healthcare Units)
USO	Unidade de Saúde Oral (Oral Healthcare Units)

Executive Summary

When it comes to indicators for oral health outcomes, the Portuguese population fares below European average. Different sources of information point to the same reality: the existence of a need for oral health care services, of different natures, that is not being met. Financial constraints are one of the most important reasons, if not the most important, preventing better health standards in this area.

Despite the existence of qualified human resources, Portuguese citizens face difficult financial barriers in accessing oral healthcare services, due to the fact that they often have to cover all of their treatment costs. This affects both lower-income families and high-income families alike, who in many cases have no choice but to cover catastrophic expenses when accessing oral healthcare services. Naturally, this financial barrier leads lower-income families to forgo these types of services, a situation that compromises their basic right to healthcare.

Aspects related to illness protection and financial constraints in accessing healthcare services are among the reasons that justify government intervention through healthcare public policy. This leads us to believe that there is room for improvement in the oral health outcomes of the Portuguese population. We analyse alternative possibilities for this improvement, by looking at four different scenarios: A) keeping the current situation; B) increasing public coverage with public provision; C) increasing public coverage with private provision; D) increasing private coverage (insurance) with private provision. Of all these scenarios, increasing public coverage with public provision or with private provision deserve closer attention due to their higher feasibility. The importance of preserving the basic right of access to healthcare led us to exclude the perpetuation of the current situation beforehand.

In addition to this analysis, we further develop a possible layout for a future national network of oral healthcare services, as well as a model for its implementation, monitoring and evaluation.

1. Introduction

Oral diseases continue to be an important public health issue. In several developed countries, treatment costs for oral diseases are as high, or even higher, as those of other types of disease such as cancer, cardiovascular diseases or dementia (Patel, 2012). This raises strong concerns, since oral diseases are highly preventable.

The present report offers an overall and unbiased view of the current provision of oral healthcare services in Portugal, and presents a roadmap for its future evolution. For this, a conceptual matrix developed by the World Health Organization (WHO) for the World Health Report of 2000 (World Health Organization, 2000) is used.

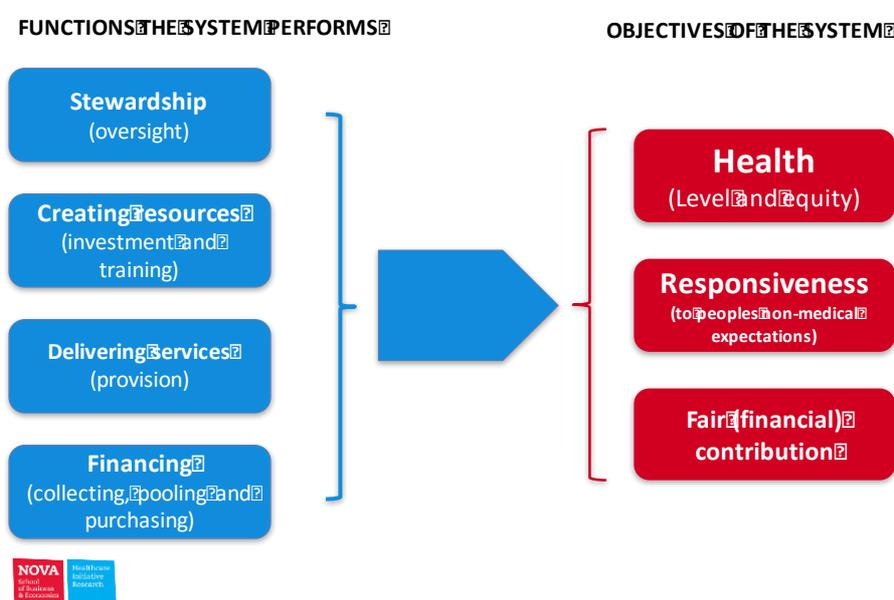


Figure 1. Relations between functions and objectives of a health system, according to the World Health Report of 2000.

This conceptual chart distinguishes the functions performed by healthcare systems from its goals. Healthcare systems have multiple goals. The World Health Report 2000 has defined as general goals: better health, both in terms of health level and equity, improved responsiveness to peoples’ needs, fairness in financial contributions and efficiency in the use of available resources. Intermediate goals are also defined, such as improving access and coverage for cost-effective interventions, without compromising the quality and safety of the provider. In order to reach all its goals, and regardless of how they are organized, all healthcare systems have to perform some basic functions, such as healthcare provision, development of human resources and other key resources, mobilization and allocation of financial resources and granting leadership and governance in the healthcare system (also known as administration, which constitutes the supervision and monitoring of all the system).

The characterization of the current functions of the system helps us understand its goals. Therefore, an analysis of the system’s evolution, the role of the National Health Service (SNS, Serviço Nacional de Saúde), the complementarity of the private sector and the National Program for the Promotion of Oral Health is carried out. In this report we focus on healthcare provision and, on a smaller degree, on its financing. Despite their relevance, the analysis of the areas of administration and creation of resources fall outside the scope of this report. The leadership and governance of healthcare systems (administration) is assuredly one of the most complex areas of any healthcare system, albeit essential to all of them. It is also the component of healthcare systems that is less understood (Siddiqi et al., 2009), in both its conceptual and practical scope, being subject to vague and sometimes contradictory definitions (Brinkerhoff & Bossert, 2013). Besides the fact that the discussion around the creation of resources is far too vast (from human resources to information systems, medicinal products and medical devices) for the purpose of this report.

In order to better describe the Portuguese system and the possibilities for its evolution, a brief characterisation of oral healthcare systems in a selected number of European Union nations is conducted. The criteria for selection of these systems was based upon each system’s relevance and applicability to the Portuguese context, as well as its organisational diversity.

Finally, alternatives for evolution are presented, considering the following scenarios: A) keeping the current situation; B) increasing public coverage with private provision; C) increasing private coverage (insurance) with private provision; D) increasing public coverage with public provision. The comparison of alternatives is done on the basis of the National Health Service’s goals, bearing in mind how best to achieve them given the existent restrictions.

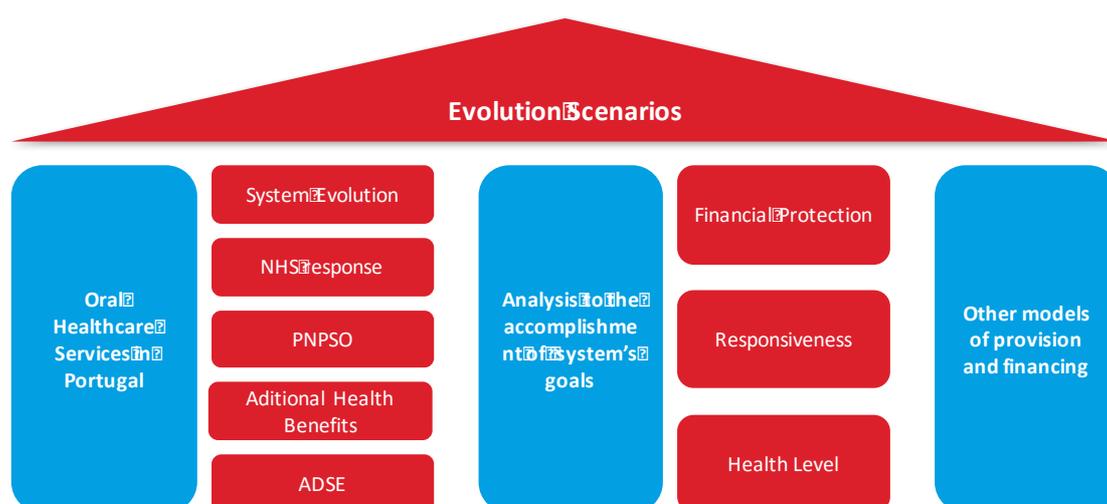


Figure 2. Structure of the report.

2. Oral Healthcare services in Portugal

The functions performed by the healthcare system contribute to the overall health status of the population. The features of each system have a decisive influence in the overall health status of the population. The function of providing healthcare services is the most familiar role within the healthcare system. In fact, the healthcare system as a whole is often identified by the population solely by its provision of health services. In the conceptual model applied, the WHO emphasizes that the provision of healthcare services is something the system does; not what the system is (World Health Organization, 2000). An adequate provision of healthcare services is that which offers effective, safe and high-quality personalized and non-personalized interventions to those who need them, when, where and to what degree they need them, and with the least possible waste of resources.

2.1 Evolution of the system

In the beginning of the 1980s, the SNS was confronted with scarce and limited resources in the area of oral health, as well as in other areas. This factor motivated a clear political choice of complementing the public provision, specifically through conventions and agreements with private providers in the areas in which responsiveness of the SNS was considered deficient (Entidade Reguladora da Saúde, 2013). In spite of this situation, dental care services were not contemplated. Consequently, the provision of oral healthcare services started to be provided mostly by private entities and largely paid by the population directly.

In spite of this gap, promotion of oral health soon came to be seen as relevant in the context of school health, child health and youth health – Program of Oral Health in School Health. Since 1985, at least, interventions related to education-for-health in schools became relevant. These interventions included nutrition education, oral hygiene (teeth brushing with fluoride toothpaste, at least two times a day, one of which is recommended to be done inside the school; the cleaning of interdental spaces with dental floss; information and training to educators, teachers and parents) and administration of fluoride (rationalizing dosage according to the age of the child and the level of this element in the public water supply, recommending daily fluoride pills to pre-school children and biweekly mouthwashes with fluoride in primary schools). In 1999, this program was revised and renamed “Program of Promotion of Oral Health in Children and Adolescents”. It started to include the application of fissure sealants and referrals of patients to dental practitioners. The program’s intention, which ended up not having much success, was to establish complementarity between public and private sectors in the provision of preventive oral healthcare services when the SNS was unable to respond.

Parallel to the development of the network of primary healthcare services, the SNS made sporadic investments in medical equipment for oral health in several Primary *Healthcare units*, although without any coherent response in terms of human resources that would make full use of these investments. Today, the use of this expensive equipment is still residual, leading to its deterioration. In 2014, when questioned about whether the amount of available equipment was adequate to meet the population’s needs, eight of the groups of primary healthcare units Groups (Agrupamentos de Centros de Saúde - ACES) responded “yes” (corresponding to 15% of all ACES), 26 (47%) responded “no”, and 21 (38%) responded that they did not have any equipment.

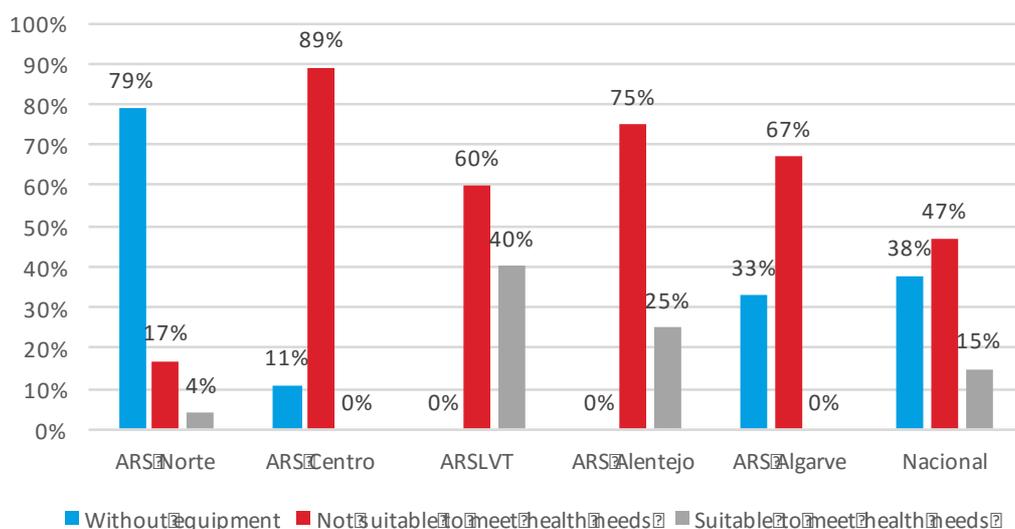


Figure 3. Adequacy of the quantity of equipment for oral hygiene, given the needs of the populations.

Source: Entidade Reguladora da Saúde, 2015.

From 2005, the National Program for the Promotion of Oral Health (PNPSO) harmonized its strategy with new orientations for the use of fluoride.

It is only from May 2008 that coverage by the SNS, resorting to private providers, is implemented. The PNPSO starts implementing the provision of dentist vouchers to pregnant women under prenatal surveillance by the SNS, as well as to the elderly that benefit from the CSI (*Complemento Solidário para Idosos*) – a welfare subsidy given to low-income elderly individuals. These dentist vouchers beneficiaries can be treated by private dentists that have a contract with the SNS.

From March 2009, the coverage of dentist vouchers is extended to children and young people up to the age of 16. In 2010, people living with HIV/AIDS virus were also covered.

Considering the high incidence rate of oral cancer, associated to low survival rates of patients with delayed diagnosis and given that early intervention, in the different levels that this is possible, is proven

to be quite effective in battling this illness, the package of services was extended to early intervention in oral cancer cases in March 2014.

More recently, the Despach n^o 12889/2015, of November 9th, came to include from March 1st of the same year, 18 year olds that had been beneficiaries of the PNPSO and had concluded the treatment plan at the age of 16; HIV/AIDS virus carriers that had already been covered by the PNPSO but had not undergone treatment for more than 24 months; children at 7, 10 and 13 years of age with special health needs, namely mental health disorders, cerebral palsy, down syndrome, among others, that weren't covered by the PNPSO.

2.2 Responsiveness of the National Health Service

In Portugal, the formally wide coverage of the SNS presents several exceptions, the most evident of which is oral health, which is mainly private (Barros, Machado, & Simões, 2011; Simões et al., 2007). The 4th National Inquiry of Health, made in 2005-6, reveals that 92.1% of dental health/stomatology appointments were made through the private sector.

In 2014 there were 8.414 dentists registered with the Portuguese Dental Association, 42% of whom were men and 58% women, thus confirming the a growing feminisation of the profession (*Observatório da Saúde Oral, 2015* - Observatory on Oral Health 2015). In 2003, the rate of feminisation was under 102% and, in 2014, it rose to 138%.

On average, there were 0.8 dentists for every one thousand inhabitants. If grouped by region of main professional address, the regions of Cávado, Terras de Trás os Montes, *Área Metropolitana do Porto*, *Região de Coimbra*, *Viseu Dão-Lafões* and *Área Metropolitana de Lisboa* have a lower than average number of inhabitants per dentist.

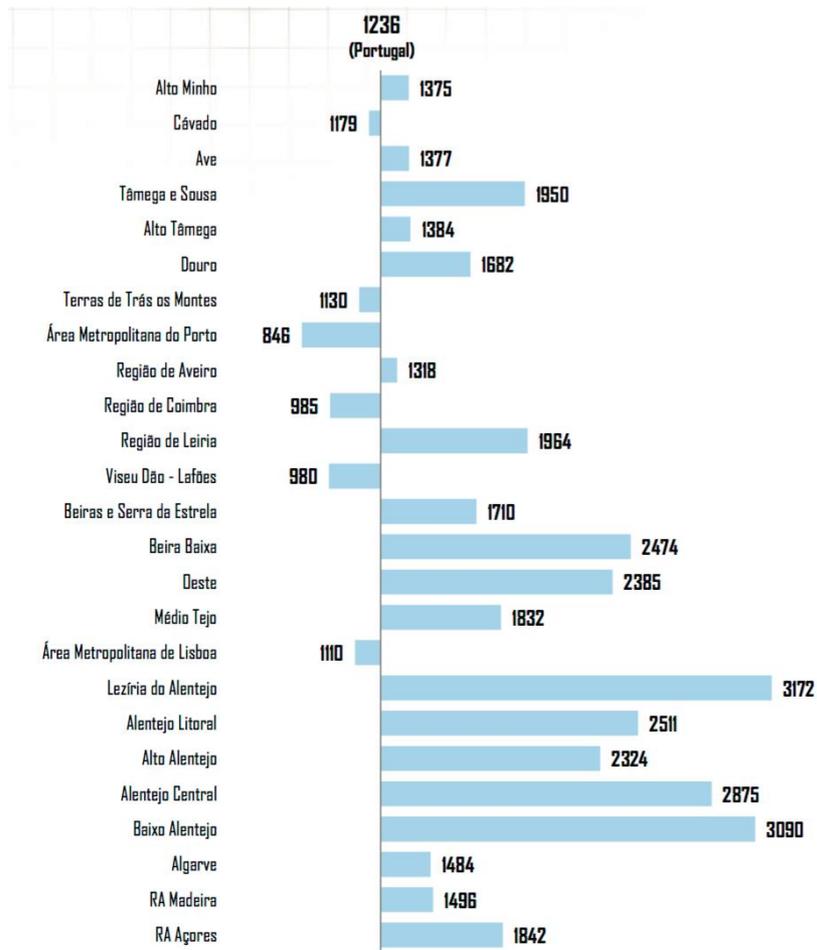


Figure 4. Number of dentists registered with the Portuguese Dental Association, per 1.000 inhabitants, NUTS III, 2014.

Source: Observatório da Saúde Oral, 2015.

Portugal has more human resources in oral health when compared to its European Union counterparts.

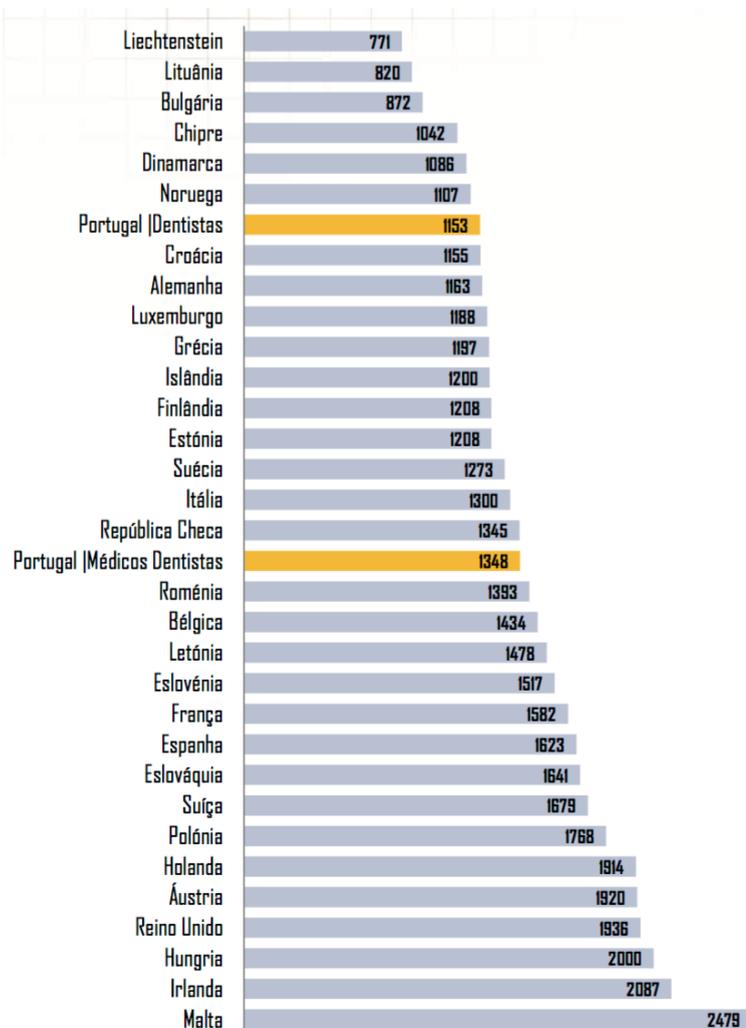


Figure 5. Ratio of population per dentist in European Union countries, 2012/3.

Source: Observatório da Saúde Oral, 2015.

When looking at secondary and tertiary healthcare, there are 131 doctors specialized in stomatology in the SNS, distributed throughout 28 hospitals, with 36 interns in this specialty. Only 13.7% of these specialized doctors are under the age of 50 and of all specialised doctors, five work at Regional Health Administrations (entities responsible for managing the SNS in their respective geographical areas) and, therefore, outside the medical context (ACSS - Administração Central do Sistema de Saúde, 2015). In 2013, besides stomatology-specialised doctors, there were dentists in public hospitals in the *Central* region (Instituto Nacional de Estatística, 2015a). Additionally, maxillofacial surgery services were provided in 12 hospitals, with 26 specialized doctors and 27 interns. Of all these hospitals, only five had at least one specialized doctor, a situation that compromises the continuity of these healthcare services (Administração Central do Sistema de Saúde, 2015).

In mainland Portugal *Primary Healthcare Units* (Portuguese territory, excluding the Azores and Madeira), 44.385 dental medicine/stomatology appointments took place in 2013 – 24.751 in the *Northern* region, 2.503 in the *Central* region, 17.131 in the *Metropolitan Area of Lisbon*, and none in the *Alentejo* and *Algarve* regions. The numbers for the autonomous regions of the *Azores* and *Madeira* are more adequate to the regional needs, with 26.193 and 21.434 appointments, respectively. These numbers reveal an evident inequity in the access to oral healthcare services between regions, as well as an underprovision of these services in continental Portugal (Instituto Nacional de Estatística, 2015a). At the same time, the supply of public oral hygiene healthcare services is also residual, which creates a notable incoherence in the distribution of the 116 professionals who provide these services in the *Primary Healthcare Units*: 9 in the *Northern* region, 28 in the *Central* region, 47 in the *Lisbon Metropolitan Area* region, 21 in the *Alentejo* region and 25 in the *Algarve* region (Entidade Reguladora da Saúde, 2014).

More recent data from the National Oral Health Barometer 2015 reveals that in the last 12 months, only 6.9% of the Portuguese population resorted to the SNS for treatment of any kind of oral health issues, 22.3% of which did not feel like their medical problem was solved (Ordem dos Médicos Dentistas, 2015). Further in this study, data on the unmet oral healthcare needs in European countries will be analysed.

2.3 The complementarity of the private sector

In countries such as Portugal and Spain, oral healthcare services are primarily provided by private doctors who are not associated, nor have conventions with, any mechanisms of financial protection of the population in case of illness and, therefore, the patients usually have to cover the total cost of these services. As previously shown, these costs create problems in accessing oral healthcare services. In countries like Denmark, oral healthcare services are free of charge for all children and young people below the age of 18, and adults cover their treatment costs from private dentists resorting to subsidy systems provided by the government. In the case of countries like France and Germany, prevention and treatment costs are covered by the basic package of public health insurance, although part of the cost is covered by the patients. (Patel, 2012).

These features directly influence the use of services. Data from the Eurobarometer indicate that citizens from Northern European countries are most likely to have visited the dentist in the previous twelve months: Netherlands (83%), Denmark (78%), Germany and Luxembourg (77%), followed by Slovakia (73%) and Sweden (71%). Citizens of several Eastern European countries seem to be the least likely to have visited a dentist during the previous year: Lithuania (46%), Poland (44%) and Romania (34%). The same can be said in the case of Spain (43%) and Portugal (46%). The percentage of the population that

affirm visiting the dentist in Austria (56%), Ireland (54%), Cyprus (54%), Italy (52%) and France (52%) are all below the EU average (57%). (TNS Opinion & Social, 2010)

In Portugal, the infrequent visits to a dentist are, as expected, mostly explained by the population's perception that these visits are not necessary (38,1%) and by the lack of financial resources (37,3%) (Ordem dos Médicos Dentistas, 2015).

2.4 The National Program for Promotion of Oral Health

The National Program for the Promotion of Oral Health – PNPSO (*Programa Nacional de Promoção de Saúde Oral*) bases its action on the promotion of oral healthcare services and prevention of oral diseases and is supported by teams of professionals dedicated to school-health. Considering the lack of resources in the SNS, the PNPSO resorts to private dentists for treatment interventions, by giving out a dentist voucher to be used at a dentist who has a convention with the program. Therefore, the implementation of the global intervention strategy, based on the promotion of health and both primary and secondary prevention of caries, is ensured.

By the end of 2015, the PNPSO had 4.150 adherent doctors (103 stomatologists and 4.047 dentists) in 7.235 different oral healthcare clinics. In this network, 240 dentists were also available for the diagnosis of oral cancer, with geographical coverage in continental Portugal.

The program has allowed the provision of dental healthcare services for key target groups within the users of the SNS and, especially, for vulnerable segments of the population:

- Pregnant women under prenatal surveillance by the SNS;
- Elderly users of the SNS who benefit from the CSI;
- Children of 7, 10 and 13 years of age enrolled in public schools or non-for-profit educational institutions;
- Children with ages between those previously mentioned (8, 9, 11, 12, 14 and 15 years old);
- Children under 7;
- SNS users who carry the HIV/AIDS virus;
- Early intervention in oral cancer.

Table 1. Characterization of the projects associated to dentist voucher.

Oral Health Project	Target Population	Max. Number of dentist vouchers/user	Starting date of the project
Pregnant Women (SOG)	Pregnant Women under surveillance by the SNS (by reference of family doctor)	3/pregnancy	27-02-2008
Elderly Individuals (SOPI)	Elderly users of the SNS who benefit from the CSI (by reference of family doctor)	2/year	27-02-2008
Children's Health (SOSI)	Children aged below 6 years (by reference of family doctor, in critical situations)	1/year (maximum of 20.000 children/year)	09-01-2009
Children and Adolescents (SOCJ)	Children and Adolescents of 7, 10 and 13 years old, enrolled in public schools or non-for-profit educational institutions	2 (7 and 10 years) 3 (13 years)	09-01-2009
	Children and adolescents with special needs, with mental illnesses, cerebral palsy, Down Syndrome, among others, who have not yet been covered by the PNPSO	Same as in the case of cooperating children; referencing via CTH for non-cooperating ones	01-03-2016
Children and Adolescents of intermediate ages (SOCJi)	Children aged 8, 9, 11, 12, 14 and 15 years old (by reference of family doctor, in critical situations)	1 per year	20-04-2010
Children and Adolescents with 15 years of age completed (SOCJ 16)	Adolescents of 16 years old who completed treatment at age 13	1 per year	01-08-2013
Children and Adolescents 18 years (SOCJ 18)	Adolescents of 18 years old who completed treatment at age 16	1 per year	01-03-2016
SNS users living with HIV/AIDS	Phase 1: SNS users living with HIV/AIDS	6 per user	27-10-2010
	Phase 2: SNS users living with HIV/AIDS who are already covered by the PNPSO and did not undergo treatment for more than 24 months	2 vouchers every 2 years	01-03-2016
Early intervention in Oral Cancer	Risk Group (opportunistic screening): male smokers, aged 40 or more and with drinking habits; SNS users with oral cavity lesions, either self-identified or identified by a stomatologist or a dentist.	1 voucher for diagnosis and 1 voucher for biopsy, every 2 years	01-03-2014

Source: Direção Geral da Saúde, 2016.

Since the beginning of the PNPSO, 3.812.267 dentist vouchers were issued, of which 72% were effectively used, as shown in Table 3 (Direção Geral da Saúde, 2016). In 2015 alone, more than 330 thousand SNS users benefited from these vouchers, bridging a gap in the SNS that was long known.

Table 2. Number of SNS users that benefited from the PNPSO¹

	2008	2009	2010	2011	2012	2013	2014	2015	Total
Pregnant Women	20538	35633	39474	38855	41444	40808	4424	49823	10699
Over 65 years old	3554	7127	6492	5451	5300	5488	571	508	3891
Childs Health (children younger than 7 years old)		7502	9033	11552	1272	20051	8667	8590	49173
Children and young adolescents (7, 10 e 13 years old)		2238	29303	250948	139869	36850	26272	16004	76584
Children and Adolescents (intermediate ages)			308	445	437	700	1103	1276	5269
Children and Adolescents (16 years old)						3087	5318	1525	4330
People Living With HIV/AIDS			41	255	244	463	443	392	1838
Oral Cancer Early detection							685	121	106
	24 092	342 548	361 651	321 109	217 121	413 747	332 283	330 239	2 342 790

Source: Direção-Geral da Saúde, 2016

Table 3. Number of total vouchers used in the context of the PNPSO

	2008	2009	2010	2011	2012	2013	2014	2015	Total
Pregnant Women	23707	60971	68120	67626	71261	67959	71624	77024	508292
Over 65 years old	3259	9829	9530	8353	8118	8107	7734	7745	62675
Childs Health (children younger than 7 years old)		8062	10212	13126	46832	11677	4451	7972	86336
Children and young adolescents (7, 10 e 13 years old)		88263	308032	318559	314931	312394	300974	287564	30717
Children and Adolescents (intermediate ages)			1706	2959	4877	5245	6717	10006	31510
Children and Adolescents (16 years old)						2122	4138	9906	16166
People Living With HIV/AIDS			20	566	503	960	958	891	3898
Oral Cancer Early detection							685	121	106
	26 966	262 869	398 029	411 189	414 373	408 464	407 281	412 529	2 741 700

Source: Direção-Geral da Saúde, 2016

In an assessment of the PNPSO, the ERS questions the right of universal coverage and equity in the access to the program, stating two main reasons: 1) there are individuals who are not covered by the program, who would have otherwise been covered if the beneficiary groups (children and adolescents, pregnant women, elderly, SNS users carrying the HIV/AIDS virus) were to be defined in a broader manner, specifically children and young people of certain cohorts and who are enrolled in private schools, the elderly who do not benefit from the CSI and pregnant women who are not under SNS surveillance; 2) the positive discrimination principle behind the attribution of dental vouchers to elderly individuals who receive the CSI is not applied in the case of pregnant women nor in the case of children and adolescents enrolled in public or non-for-profit educational institutions, who do not need to fulfill any requirements to benefit from dental vouchers (Entidade Reguladora da Saúde, 2014).

However, despite the flaws identified in the program, namely its non-universal character, the ERS concluded that the creation of the PNPSO has created a significant increase in the coverage of publicly-financed healthcare services, contributing to the inclusiveness attribute of the SNS and considering it an important lever for the improvement of the population’s oral health outcomes (Entidade Reguladora da Saúde, 2014). Furthermore, it suggests that the inclusiveness of the PNPSO has been increasing over the last years, considering the most vulnerable segments of the population, as well as the need for prevention of severe oral diseases.

¹ In the 2012/2013 academic year, the rules for the emission and use of dentist vouchers changed, in order to make the use of the vouchers coincide with the civil year, even though the emission starts at the beginning of the academic year. This change has produced a lag in the use of the vouchers issued in 2012, which only started to be used in 2013. The data for 2014 already reflects the historic normality.

In turn, the Directorate General of Health (*Direcção-Geral de Saúde*) considers that the improvement of the health situation in the permanent dentition of children and adolescents is not only a result of the reduction in the levels of illness but also of the increased response levels through the PNSO (*Direcção-Geral da Saúde*, 2015), as can be seen in Table 4.

Table 4. Indicators for Oral Health between 2006 and 2013.

Indicators	Age	2006	2013
CPOD	6 years	2,1	1,62
	12 years	1,49	1,18
	15/18 years	3,04	2,51
Caries-free	6 years	51%	54%
% of adolescents with healthy gums (Community Periodontal Index = 0)	12 years	29,1	51,8
	15/18 years	21,1	41,8
% of adolescents with at least 1 fissure sealant applied in permanent teeth	12 years	38,1	55,2
% of children and adolescents of 6 and 12 years old, who brush teeth at least once a day	6 years	76,3	78,7
	12 years	88,6	89,5
	15/18 years	19,8	29,3

Source: Direcção Geral da Saúde, 2015 – own analysis

2.5 Additional Health Benefits

Taking into account the need for supporting economically disadvantaged elderly individuals, who spend a considerable portion of their resources on health, namely with drugs and other under-subsidised goods, the attribution of Additional Health Benefits – BAS (*Benefícios Adicionais de Saúde*) was initiated. The purpose of these additional benefits was the same as that of the attribution of the CSI for elderly individuals, namely to reduce inequality and improve the quality of life of these SNS users. These additional benefits comprise the refund of a percentage of the costs incurred by these individuals on drugs, eyeglasses and removable dental prostheses. The amounts refunded are established in accordance to the medical specialty in question and the legal boundaries established, only covering the non-subsidized portion of the cost. In terms of removable dental prostheses, the government refunds 75% of the costs for acquisition and repair, to the limit of 250 euros every three years. In 2014, 1.462 elderly individuals benefited from these refunds, which totalled 220.114€ (Ministério da Saúde, 2015). It is important to note that, by June of 2015, the CSI was being given out to 165.825 citizens (Instituto de Informática, 2015). This means that less than 3% of the potential beneficiaries actually benefited from the PNPSO and less than 1% benefited from the BAS subsidies for prostheses. Relative to its potential pool of beneficiaries, the use of the PNPSO and the BAS by the elderly population remains residual.

2.6 The ADSE

The ADSE – “Assistência na Doença aos Servidores Cíveis do Estado” (Assistance in illness for the Government’s Civil Servants), is the initial designation of this organism in 1963 and is responsible for managing the health protection system of civil servants. This designation was changed in 1980 to the “Direção-Geral de Proteção Social aos Funcionários e Agentes da Administração Pública (ADSE)” (Directorate General for the Social Protection of Workers and Agents from the Public Administration). In 2011, the designation was changed again to “Direção-Geral de Proteção Social aos Trabalhadores em Funções Públicas” (Directorate General for the Social Protection of Workers in Public Functions).

The ADSE finances the treatment, rehabilitation and health surveillance expenditures incurred by its beneficiaries. Its benefits’ scheme is regulated and includes dental medical care. Beneficiaries can resort to a network of healthcare providers contracted by the ADSE (ADSE Network) or opt to go to independent providers (ADSE reimbursement scheme). During the past few years, the beneficiaries of the ADSE have been increasingly opting for the ADSE Network. However, the expenditures of the reimbursement scheme continue to exceed those of the ADSE Network. In 2014, approximately 22,5% of the beneficiaries of the ADSE have used oral healthcare services (ADSE, 2015).

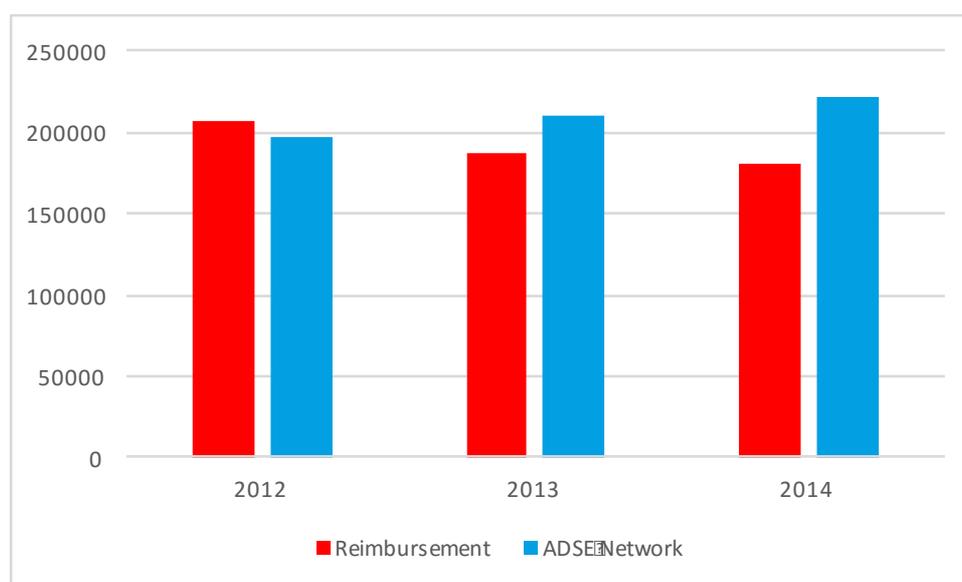


Figure 6. ADSE Beneficiaries with oral healthcare consumption.

Source: ADSE (2015) – own analysis

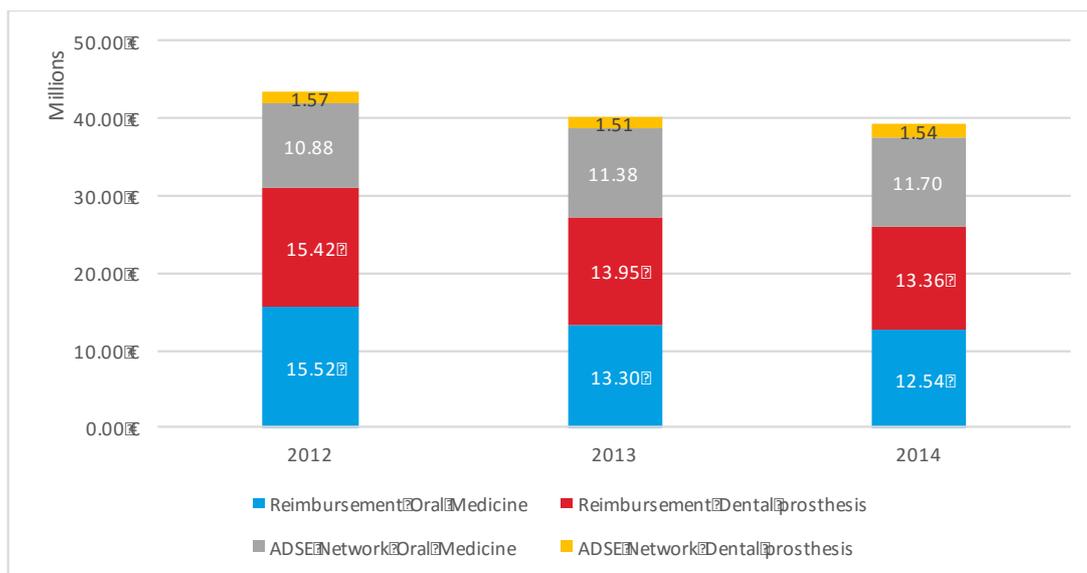


Figure 7. Annual costs incurred by the ADSE with oral healthcare services between 2012 and 2014.

Source: ADSE (2015) – own analysis

In 2014, there were 443 service providers with ADSE contracts in the area of Dentistry, and 207 in the area of dental prosthesis. When accessing the ADSE Network, the beneficiaries cover 20% of the costs incurred by the ADSE. In 2014, 221.029 users benefited from the ADSE Dentistry contracted network, with a cost per user of 52,92€ (ADSE, 2015).

The ADSE beneficiaries who opt for the reimbursement scheme cover the total cost of the healthcare services provided, requesting the respective refund at a later date. The refund is made in accordance with a specific pricing table. In 2014, 179.962 beneficiaries requested refunds for Dentistry services, and 64.769 for Dental Prosthesis services. The associated costs for the ADSE were of 69.69€/user in Dentistry and 206.27€/user in Dental Prosthesis (ADSE, 2015).

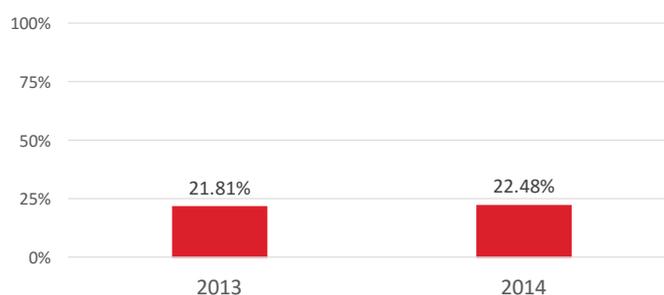


Figure 8. Annual rate of utilization of oral healthcare services by ADSE beneficiaries.

Source: ADSE (2015) – own analysis

Even though the ADSE only covers one fifth of the population living in Portugal (1.783.456 beneficiaries in 2014), it has disbursed almost three times more resources in oral healthcare than the SNS did through

the PNPSO. This means that the current PNPSO coverage is far from being universal, as required by the SNS principles, and the ADSE beneficiaries are far more protected in oral health than the rest of Portuguese citizens. However, it is important to point out that this wider level of protection depends on a voluntary and individual financial contribution on the part of the ADSE beneficiaries.

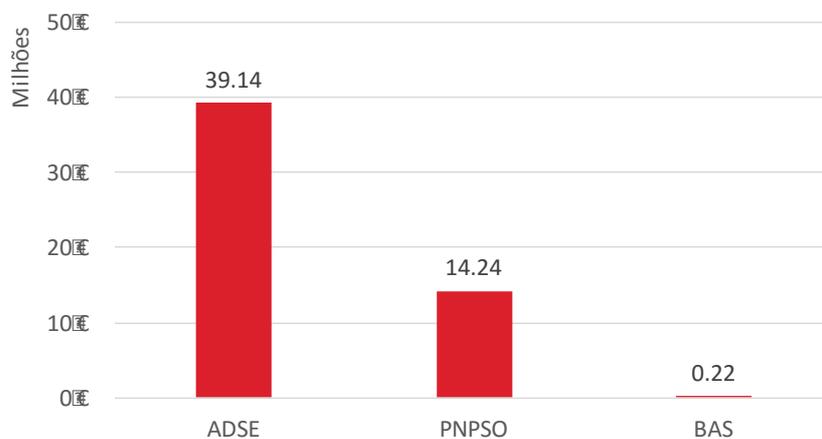


Figure 9. Comparison of public expenditures in oral healthcare services, 2014.

Source: ADSE (2015), Ministério da Saúde (2015) – own analysis

3. Accomplishment analysis of the system's goals

3.1 Financial Protection and contributive justice

Healthcare systems have evolved towards allowing people to benefit from healthcare services in accordance with their specific needs, protecting them from the adverse financial consequences of not knowing the costs and payment conditions beforehand. Today this goal is widely known as the “universal health coverage” goal (UHC, *Universal Health Coverage*). It was with this motivation that social health insurance systems (or National Health Systems) have developed in Europe, and the recent reforms in the USA, nowadays known as *Obama Care*, were implemented.

Families can be poor and face catastrophic health expenditures² when accessing healthcare services. Fundamentally, the guarantee that they are not going to have to face financial difficulties in accessing these services is a crucial component of the *universal coverage* goal. In this sense, not only should healthcare systems be designed to improve health standards, but also guarantee that this improvement is not detrimental to other aspects of the citizens' usual life that are unrelated to health. The concept of financial protection, or, conversely, the absence of risk of financial difficulties, has been the focus of interest by economists and researchers, so much so the measurement of the capacity of healthcare systems to protect people against these financial difficulties associated with the payment of healthcare services.

Let us analyze two commonly used concepts related to the financial difficulties faced in direct payments of healthcare services or the absence of protection against financial risk: “catastrophic health expenditures” and “impoverishment”. The concept of “catastrophic health expenditures” refers to situations where out of pocket payments made are so high in comparison to the family's resources that they are forced to reduce consumption of essential goods and services. The “impoverishment” created by out of pocket payments refers to the concern that these situations can drag families to levels below the poverty line, in terms of available income.

In Portugal, a large portion of financing (around 33.8% of total expenditure) is private, primarily in the form of direct charges of families (both co-payments and direct payments made by the patient) – 27.7% (Instituto Nacional de Estatística, 2015a). In 2012, the non-mandatory private insurance schemes covered, around 20.2% of the population (Instituto de Seguros de Portugal, 2013), but its charges represented 3.6% of total expenditures in health, by 2014 (Instituto Nacional de Estatística, 2013). Recent studies have demonstrated that, in the period between 2000 and 2010, the catastrophic expenditures in healthcare services were a relevant issue in our country, and have recommended the

² Catastrophic medical expenditures occurs when fees for healthcare are higher than family income, forcing them to cut down on essential goods and services (Saksena, Hsu, & Evans, 2014).

development of mechanisms that not only allow a reduction in private household expenditures but also avoid exposing especially vulnerable groups to these effects (namely children, disabled people and people suffering from chronic diseases) (Borges, 2013; Kronenberg & Barros, 2014).

More recent data regarding the budget of Portuguese households demonstrate that between 2000 and 2010 the percentage of the population that experience these catastrophic/impoverishment expenditures has increased, to approximately 11.2% (920.000 to 1.060.000 people).

The portion of the population that faces catastrophic or impoverishment expenditures with direct payments varies according to the income quintile ratio. As expected, 30% of the population within the poorest quintile is affected by this phenomenon in opposition to 3% of the richest quintile (Instituto Nacional de Estatística, 2015b).

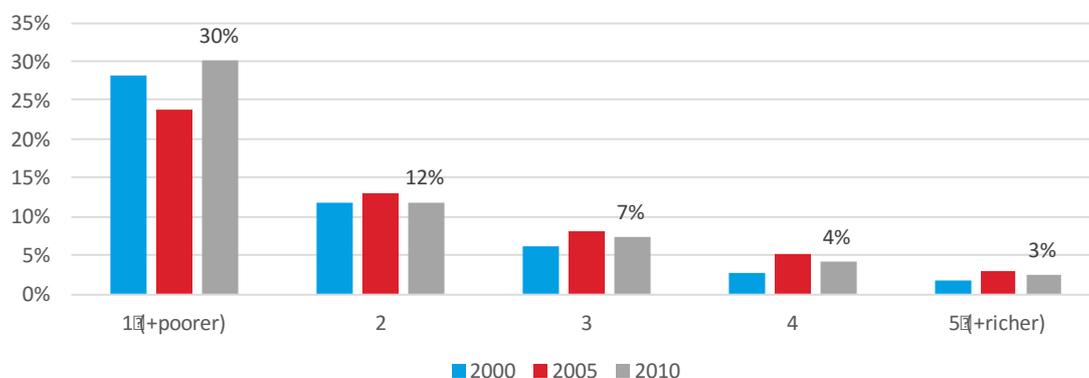


Figure 10. Percentage of population facing catastrophic expenses or impoverishment expenses, according with the quintiles of income.

Source: Instituto Nacional de Estatística (2015b) – own analysis.

The evolution of direct payments in the percentage of household consumption has increased in Portugal from 5.9% in the year 2000 to 7.5% in 2005, later falling back to 7.1% in 2010. Drugs represented the majority of out of pocket payments and its weight has been increasing with time. However, the most dramatic growth is observed in the access to dental healthcare services, which registered an increase of 8pp within 10 years: in 2010, almost one fifth of out of pocket payments in Portugal were made in Dentistry, when in 2000 they only represented one tenth (Instituto Nacional de Estatística, 2015b).

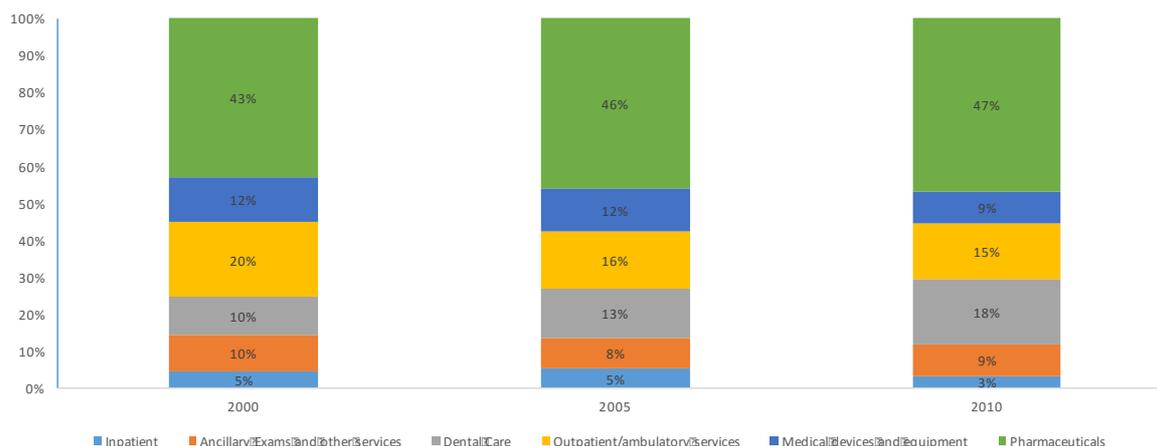


Figure 11. Weight of the different types of healthcare services in the total of direct payments made.

Source: Instituto Nacional de Estatística (2015b) – own analysis.

As the percentage of the population affected by catastrophic or impoverishment expenditures varies according to income levels, so does the structure of out of pocket payments made by households. Among the 20% of poorest households, drugs carry an overwhelming weight (69%) against a mere 22% in the 20% of richest households. Conversely, dental care takes up 7% of all payments in the first quintile and 40% in the last quintile, being the medical area responsible for the catastrophic expenditures among the richest households (Instituto Nacional de Estatística, 2015b). This may be a result of the population’s perceptions and its financial capacity. On the one hand, the poorest households regard dental healthcare services as unessential when compared to getting drugs and thus simply do not access healthcare services in this area. On the other hand, households on the richest quintile easily absorb the expenditure of drugs, but costs with dental healthcare (which are higher) lead to catastrophic expenditures.

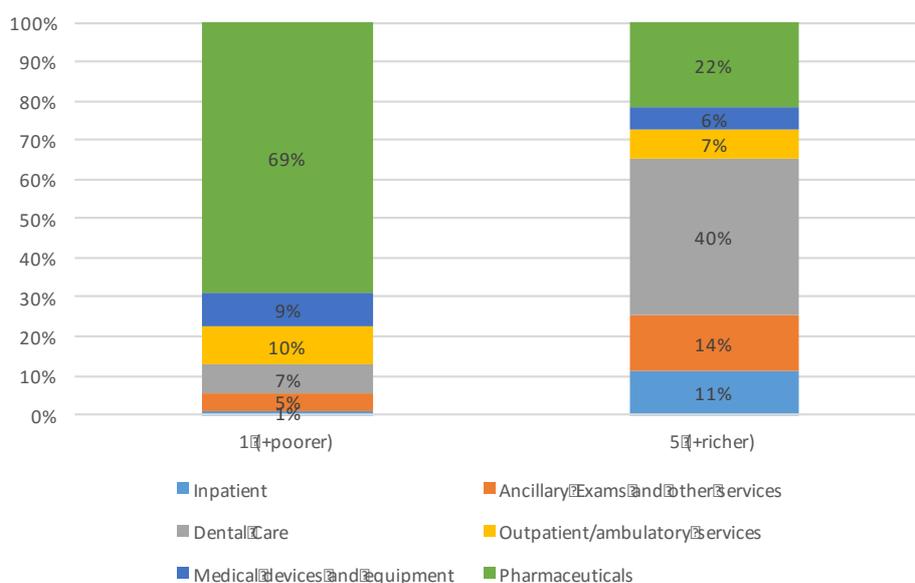


Figure 12. Weight of the different types of healthcare direct payments, for households of the first and fifth income quintiles.

Source: Instituto Nacional de Estatística (2015b) – own analysis.

The data presented demonstrates the role of dental healthcare as a triggering factor of catastrophic and impoverishment expenditures that result from the absence of financial protection mechanisms in oral healthcare. In this respect, the poorest households are particularly affected by the financial barrier preventing them from accessing this type of services.

3.2 Responsiveness to people's expectations

Besides increasing the population health level, healthcare systems are also accountable for meeting the population's expectations. Specifically, people have the right to be treated with dignity by the system. As far as possible, the system has to be able to promptly attend to the population's needs, without having to wait too long for treatments or diagnoses – and this is not only important to increase the quality of these treatments and diagnoses but also to respect people's value of time and decrease their anxiety.

The great majority of the Portuguese population (91.9%) is satisfied with their dentist (Ordem dos Médicos Dentistas, 2015). For the remaining population, the reasons for dissatisfaction mainly reside in the costs of services. In line with data for financial protection, 63.9% of the detractors single out the high costs of the services as the reason for their dissatisfaction.

On the other hand, the Portuguese spend more minutes, on average, traveling to their personal dentist (21.75 minutes) than they would if they traveled to the closest dentist (16.45 minutes). This situation reflects the variety in the supply of dental healthcare services, which creates a high degree of freedom in choosing an oral healthcare provider. This situation is also reflected in the value that the population gives to the personal relationship between doctor and patient: almost half of the Portuguese population – 47.1% - have never changed dentist, 56.9% of which point to the fact that they are regular costumers (and thus familiarized to their doctor's approach) as the reason for not leaving and 54.7% point to the fact that they trust their doctor's work. For those who did change dentist or showed interest in doing so, 19.1% reported the increase in the costs of appointments and treatments as the main reason, followed by having lost trust in their doctor (13.6%).

It appears that the cost of services is the reason why most Portuguese wish for a reform of the oral healthcare system. However, there isn't a clear strategic option that is consensual among the population: 72.5% consider access to oral healthcare services through the SNS to be very important, and 73.9% consider government subsidies for appointments in private healthcare providers as the right approach (Ordem dos Médicos Dentistas, 2015). Nonetheless one can infer that the population's expectation resides in a change to a pre-payment model that protects citizens financially: the great majority of the

Portuguese pay for their oral healthcare directly to their dentist and at the moment of the appointment (72.4%), while only 0.4% state that they resort to the SNS in order to benefit from free appointments. Additionally, the majority of the Portuguese population is unaware that the SNS provides oral healthcare services (61.0%) (Ordem dos Médicos Dentistas, 2015).

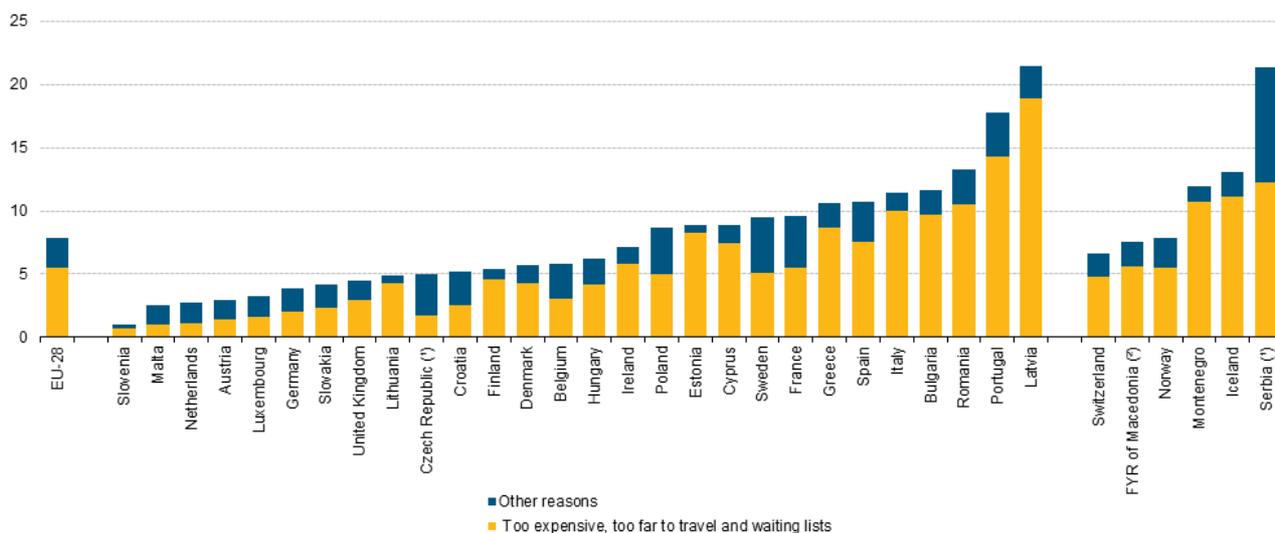
All in all, despite the high degree of satisfaction with oral healthcare services, a financial barrier seems to persist for most of the population. On the other hand, 46.7% of the Portuguese have not visited their dentist for more than a year, and around 6% have never visited a dentist (Ordem dos Médicos Dentistas, 2015). Those who have visited a dentist in the last year are, mainly, of a wealthier socioeconomic class. Comparatively, the countries with the highest rates of visitation of an oral healthcare professional in the last twelve months tend to be in Northern European countries: the Netherlands (83%), Denmark (78%), Germany and Luxembourg (77%), followed by Slovakia (73%) and Sweden (71%). We should take into consideration that, in some countries, visiting a dentist once a year, or even every six months, is mandatory, in order to keep benefiting from health insurance for oral healthcare services (TNS Opinion & Social, 2010). This means that Portugal seems to have a rate of use of oral healthcare services that is lower than desirable. The population's expectation is that mechanisms of financial protection for accessing these services will be put in place, whether through an insurance system or a tax-financed system, even for those who can currently afford them.

3.3 Health level and equity

A good healthcare system contributes, above all, to a good level of health. But it is not always enough to improve the average health level of the population, if at the same time inequality increases or persists at very high levels. Healthcare systems are also accountable for reducing inequality, giving priority to improving health level of the most disadvantaged, whenever the causes of this inequality are possible to correct. Thus, the goal of achieving high health levels is a twofold: to increase the average level of health – goodness – and to reduce the differences among individuals and groups – fairness (World Health Organization, 2000).

Data from the EU-SILC (*European Union Statistics on Income and Living Conditions*) concerning the year of 2013 allow us to analyze the unmet healthcare needs of the Portuguese, and compare them to European counterparts (2015). On the one hand, Portugal ranks quite well in terms of unmet healthcare needs in all healthcare services. Only 5.1% of the Portuguese people over the age of 16 reports having unmet healthcare needs, against an average of 6.9% for the EU. However, Portugal is also the second EU country with the highest percentage of people over 16 reporting unmet healthcare needs in the area of oral healthcare: 17.8%, against an EU average of 7.9%.

These figures are substantiated by the fact that the most important cause of unmet oral healthcare needs is the cost (79.8%), followed by the “fear” associated with the oral healthcare procedures (6.7%). Other possible causes such the distance to the provider (0.0%), the waiting list (0.6%), the lack of time (5.1%), waiting for the problem to be sorted out by itself (0.7%) are residual when compared with the barrier of the financial cost.

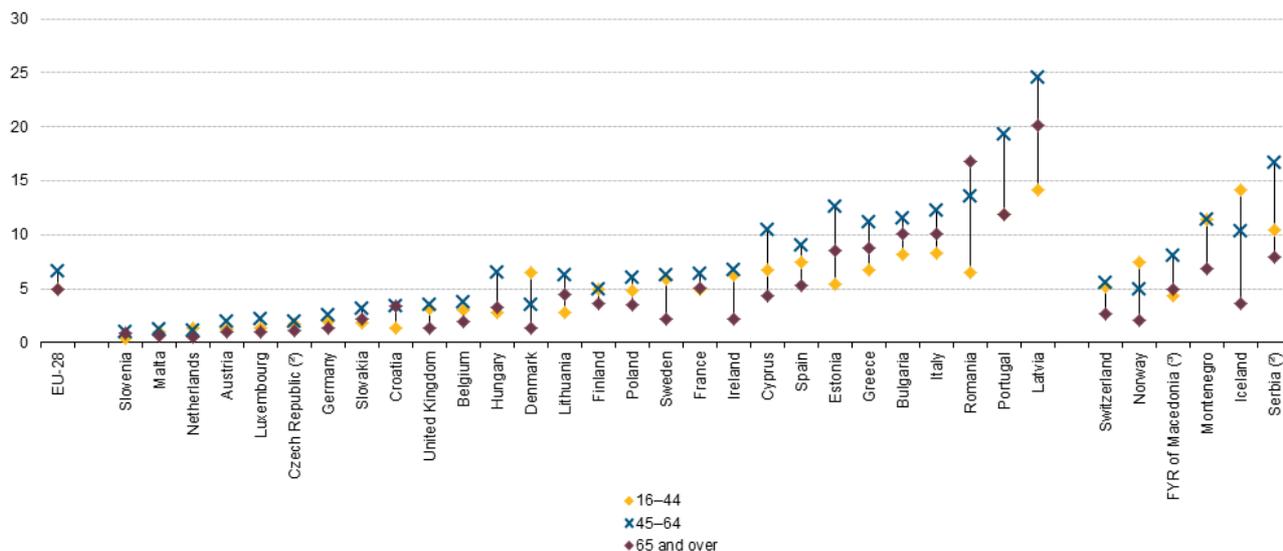


(*) Data with low reliability.
 (*) 2012.
 Source: Eurostat (online data code: hlth_silc_09)

Figure 13. Share of persons aged 16 and over reporting unmet needs for dental care, 2013

Source: Eurostat (2015).

Cohorts between 45 to 64 years old are the most affected by unmet oral healthcare needs (19.3%), while people over 65 and people between 14 and 44 report a similar figure (11.9%).



(*) Ranked on the overall share of persons reporting unmet needs for dental care due to being too expensive, too far to travel or waiting lists.

(*) 16-44 and 45-64: Data with low reliability.

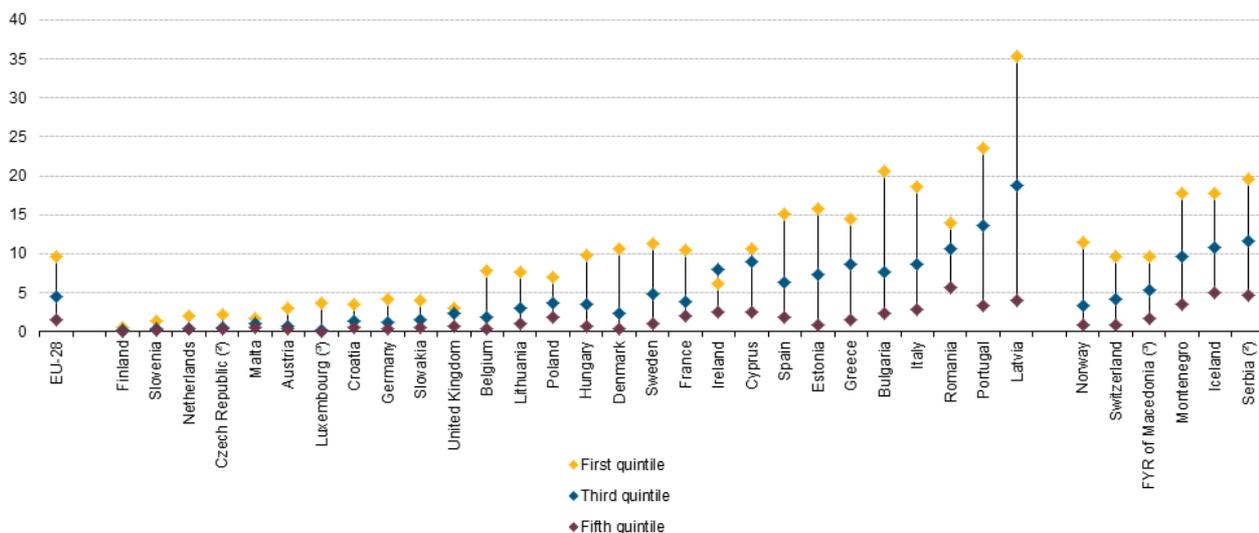
(*) 2012.

Source: Eurostat (online data code: hlth_silc_09)

Figure 14. Share of persons aged 16 and over reporting unmet needs for dental care due to being too expensive, too far to travel or waiting lists, by age, 2013 (1) (%).

Source: Eurostat (2015).

In terms of income, the first quintile is by far the most affected one (23.5%), while the rest of the quintiles follow a gradual pattern, as expected: second quintile (20.8%), third quintile (13.6%), fourth quintile (9.5%) and fifth quintile (3.4%). These data show a clear inequity in the unmet healthcare needs, with especially high levels for the first two quintiles of income.



(*) Ranked on the overall share of persons reporting unmet needs for dental care due to being too expensive.

(*) Data with low reliability.

(*) 2012.

Source: Eurostat (online data code: hlth_silc_09)

Figure 15. Share of persons aged 16 and over reporting unmet needs for dental care due to being too expensive, by income quintile, 2013 (*) (%)

Source: Eurostat (2015).

When comparing the national data with the EU average, it becomes clear that Portugal faces a less favourable situation than its counterparts.

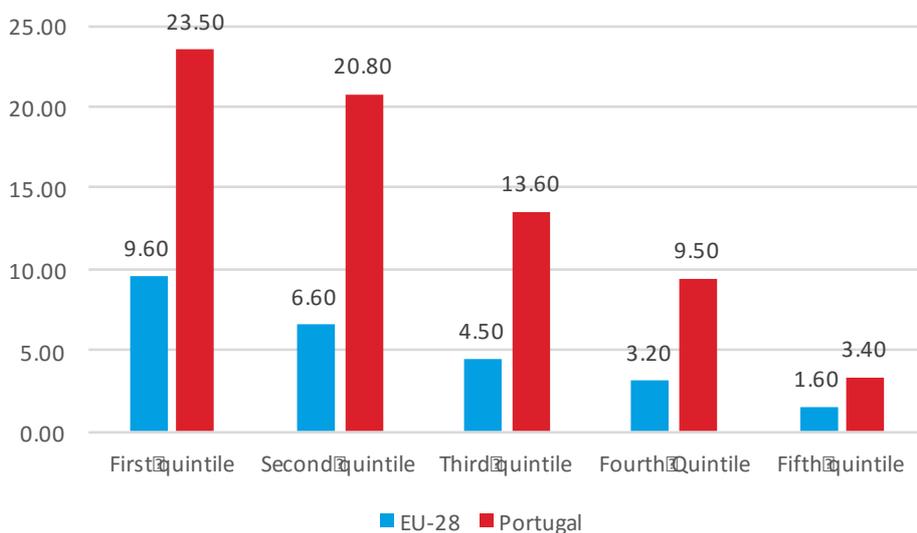
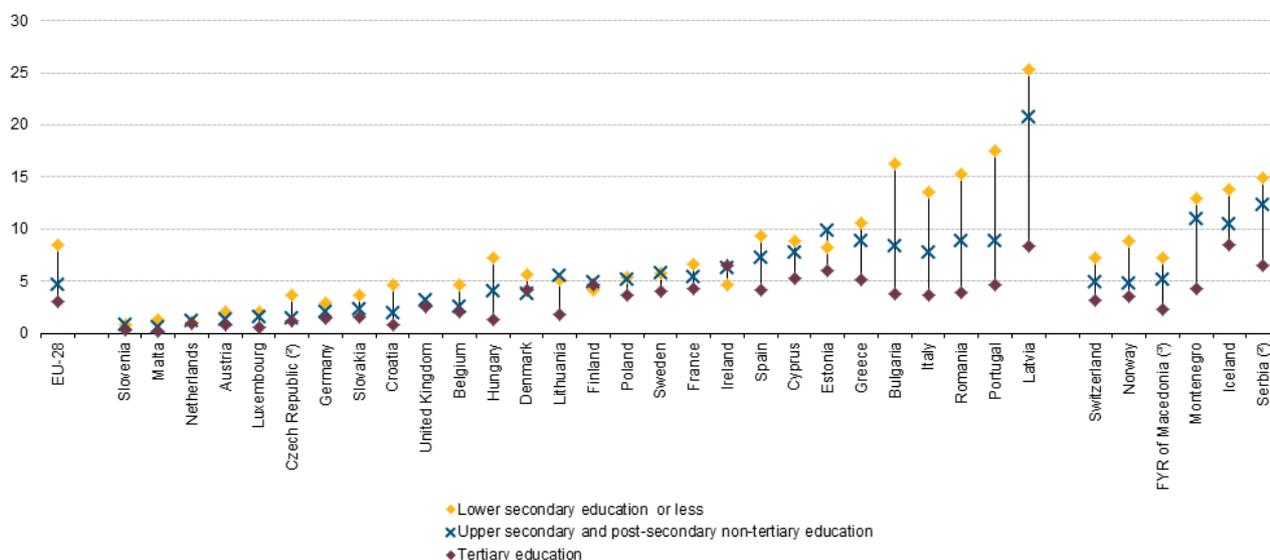


Figure 16. Percentage of people over 16 who report having unmet healthcare needs in oral health due to these services being too costly, by quintile of income, 2013 (detail Portugal and EU).

Source: Eurostat (2015).

In terms of schooling, people who completed secondary education report lower levels of unmet healthcare needs in oral health (17.5%), confirming the data obtained for income levels.



(*) Ranked on the overall share of persons reporting unmet needs for dental care due to being too expensive, too far to travel or waiting lists.

(*) Data with low reliability.

(*) 2012.

Source: Eurostat (online data code: hlth_silc_16)

Figure 17. Share of persons aged 16 and over reporting unmet needs for dental care due to being too expensive, too far to travel or waiting lists, by educational attainment level, 2013 (*) (%)

Source: Eurostat (2015).

These unmet oral healthcare needs have consequences in the oral healthcare standards of the population. The percentage of individuals who have a complete dentition is a common indicator for the overall oral health standard of a population. Data from the Eurobarometer (2009) indicate that only 41% of Europeans have a complete natural dentition. Large disparities exist across European nations in this regard. The largest rates of complete natural dentition are usually found in Scandinavia (Sweden, Denmark, Finland), in Ireland and in the southeastern countries (Cyprus, Malta, Greece). Eastern Europeans have the lowest rates of complete dentition (Hungary, Estonia, Poland, Slovakia, Latvia), with rates ranging from 19% to 29%. The complete dentition rate in Portugal is 32%, below EU average, but an increase since the *Barómetro de Saúde Oral 2015*, a survey that reported that only 28% of the Portuguese have a complete dentition, excluding wisdom teeth.



Figure 18. Percentage of adult population with complete natural dentition.

Source: Patel (2012).

Together with this indicator, it is also important to look at the percentage of the adult population over 65 that is toothless. In this regard, Portugal continues to present one of the worst oral health indicators at the European level (Kravitz, Bullock, Cowpe, & Barnes, 2015).

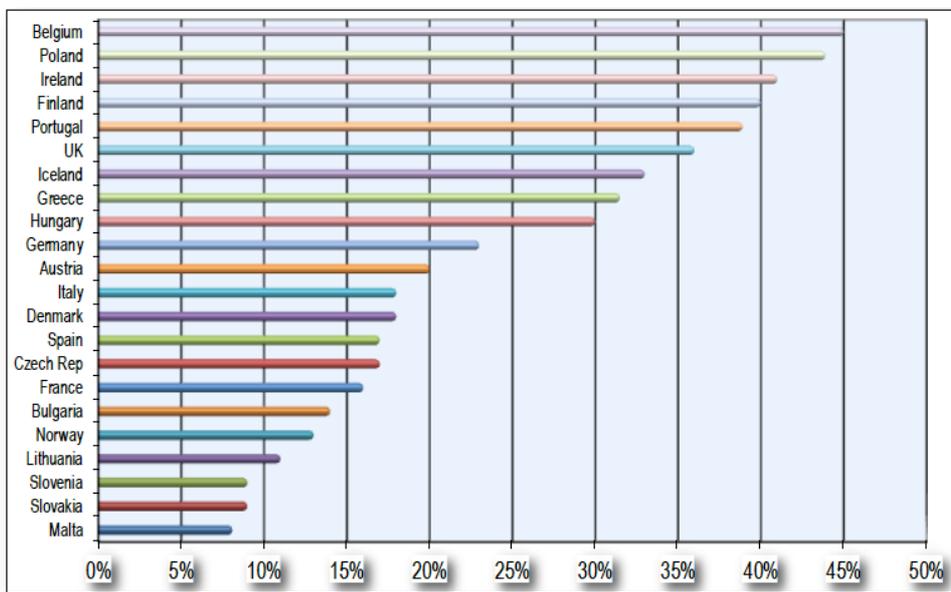


Figure 19. Percentage of adult population with over 65 years old without teeth.

Source: Council of European Dentists (2015).

Another key indicator for determining the oral healthcare standard of a population is the rate of incidence of lip cancer and oral cavity cancer. The risk factors for these types of cancer are predominantly related with lifestyle habits such as smoking, alcohol intake, bad nutrition, viral infections and exposure to

pollution. Other risk factors include age, gender and exposure to sunlight. The role of *Candida sp.* infections and the papillomavirus has also been documented. In the initial phase of the disease, patients rarely seek help for oral cancer due to its painless nature and, consequently, diagnoses are usually made when the cancer is at an advanced stage (Patel, 2012). In this type of cancer, Portugal figures among the European nations with a higher incidence among men, and also among the nations with higher mortality figures (Ferlay J et al., 2013).

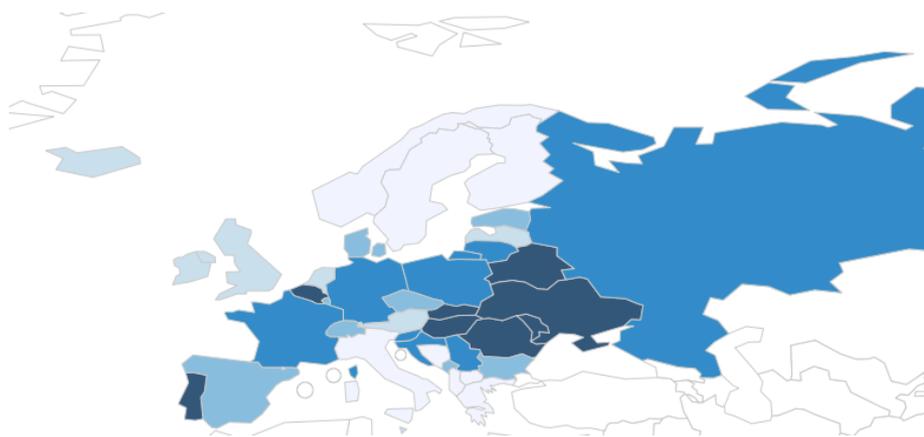


Figure 20. Incidence of lip cancer and oral cavity cancer in men, adjusted by age, 2012.

Label: blue gradient: <5; 5 - 6,5; 6,5 – 7,5; 7,6-8,6; >8,6 per 100.000 inhabitants
 Source: Ferlay J et al. (2013).

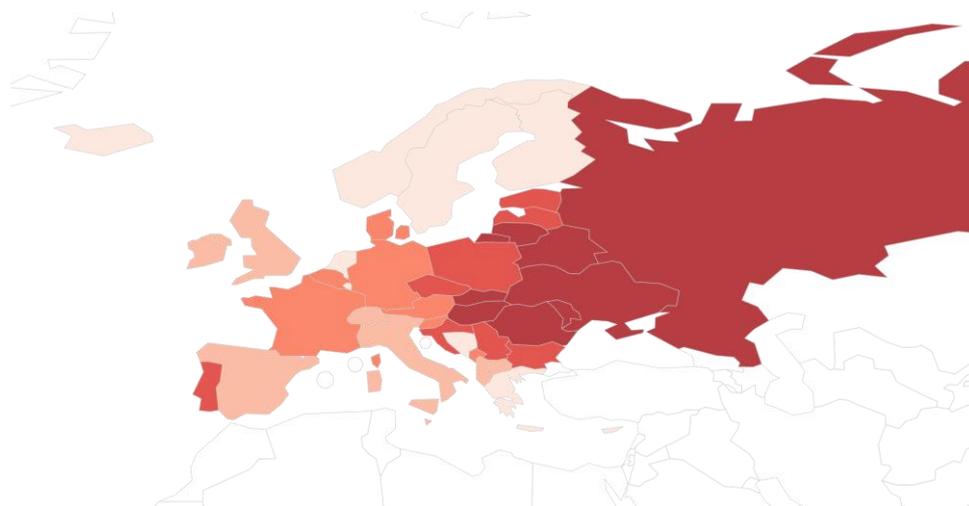


Figure 21. Mortality rate by lip cancer and oral cavity cancer in men, adjusted by age, 2012.

Label: red gradient: <1,4; 1,4 – 1,9; 2 – 2,5; 2,6-4; >4,5 per 100.000 inhabitants)
 Source: Ferlay J et al. (2013).

Besides geographical disparities, there are also significant differences in the oral health indicators across socio-demographic statuses in Europe. The most advantaged socioeconomic categories are more likely to have a complete natural dentition. There are large disparities in oral healthcare indicators across the EU, explained by the socioeconomic status, age, gender or overall health standard of the person in

question (Patel, 2012). An equitable access to oral healthcare is an important factor in the reduction of the inequality in oral healthcare standards. Several studies demonstrate that the most intense inequalities are produced among the society's most disadvantaged and vulnerable: people who live in material and social deprivation conditions, people living in psychiatric hospitals, frail and vulnerable elderly individuals, inmates, homeless individuals, refugees, migrant populations, disadvantaged ethnic groups and adults with special learning needs (Patel, 2012). All across the EU, it is known that the groups reporting low oral healthcare standards have a difficult access to dental care. They generally use the primary care services or emergency treatment services when in pain, instead of seeking prevention services (Patel, 2012).

The above-mentioned data demonstrates that the oral health indicators in Portugal are below EU average, and that these depend on a vast number of determinants. On one hand, it is known that oral cavity diseases have risk factors that are common with the majority of the chronic diseases (cardiovascular diseases, cancer, respiratory chronic diseases and diabetes), as well as with bad nutrition, smoking habits and alcoholism (Petersen, 2008; World Congress 2015, 2015). On the other hand, there is a need for developing strategies targeted at the promotion of adequate oral hygiene habits, and the access of oral healthcare services. Specifically, in Portugal, the lack of financial protection in the access to healthcare services seems to contribute decisively to the observed health indicators.

This means that the different sources of information point to the same reality: the existence of oral healthcare needs that are not being met, and a financial barrier that constitutes the primary obstacle, if not the main obstacle, to a better oral health standard. Aspects related to illness protection and financial constraints in accessing healthcare services are among the reasons that justify government intervention through healthcare public policy. This leads us to believe that there is potential for improvement in the oral health outcomes of the Portuguese population.

4. Other models of provision of care and financing

The provision of oral healthcare services varies considerably across EU member states. The *Council of European Dentists* often gathers country-level data, providing an extensive characterization of each of the healthcare systems, especially in regards to oral health (Kravitz et al., 2015).

In 2012, by request of the *Platform for Better Oral Health in Europe*, the “*State of Oral Health in Europe*” report was published. This report compares some countries’ systems according to their sources of financing and their standards of access to healthcare services (Patel, 2012). By these indicators, it is possible to separate countries in two large groups: 1) those with systems that are essentially financed through general taxation and 2) those with systems that are based on social insurance. Despite this categorization being largely outdated (World Health Organization, 2010), it will be used throughout this report to facilitate comparison among systems.

As noted previously in this report, Portugal can be included in the group of countries where the financing of the healthcare system is based on general taxation. However, public coverage of healthcare services in Portugal is quite limited when compared with its EU counterparts, a situation that has consequences to the overall health standards.

Healthcare systems financed by general taxation

In this group of healthcare systems, the majority of the financing is obtained through nationwide taxes or local taxes. However, the healthcare services provided can be either of universal access or legally limited to some groups of people.

Cyprus and Ireland limit the access to oral healthcare services to certain population groups. In Cyprus, only 83% of the population, including children of ages within the mandatory schooling years, people with low income, public workers, members of the National Guard and the police force have the right to free treatment services, paid by the public sector (these groups pay 3€ independently of the nature of the healthcare services provided and 75€ for a prosthesis). For orthodontic services, only children below the age of 18 are given the right to social assistance from the public sector. However, the great majority of the population uses the private sector, where they pay by item of service (*fee for service*). In this way, the great majority of Cypriot dentists’ work in private offices. In Ireland, the public provision of oral healthcare services is limited to a certain number of procedures, and only covers children below the age of 16, to those who do not have financial capacity to cover the costs of private care and institutionalized individuals. Just as in Cyprus, the majority of Irish dentists works in the private sector (68%).

Other countries such as Denmark, Spain, Italy or the United Kingdom theoretically offer oral healthcare services to all the population. However, a more careful analysis tells us that, despite this supposed universal coverage, the treatment options can be limited.

In Denmark, the oral healthcare services are free of charge for children below the age of 18, and normally provided at school. Vulnerable demographic groups, including the elderly and those of low socioeconomic status, also receive free oral healthcare services. After the age of 18, these services are co-financed by the government. On average, patients pay 82.5% of the costs and the government, through the municipalities, cover the remaining 17.5%.

In Spain, almost all healthcare services are provided by private doctors (99%) and the adult patients cover the total cost of the procedures. In the majority of its autonomous regions, there is a small public oral healthcare system for primary healthcare only, which is focused on emergency healthcare services (e.g. extraction of teeth, prescription of antibiotic therapy).

In Italy, the public oral healthcare system varies across regions and, in practice, is limited to emergency healthcare services. Theoretically, all people are eligible for these services, but in reality these are mostly accessed by individuals of lower or middle socioeconomic classes who cannot afford private sector healthcare services. In some regions, school screening and other programs of prevention and promotion of oral health were introduced. In general, these activities are not standardized, and they are not the norm. The majority of the dentists work in their individual offices or in small groups (91%).

In the United Kingdom, the groups receiving free dental care services from the *National Health Service* (NHS) include: children under the age of 18; pregnant or nursing women; individuals covered by certain social benefit schemes; and those under the age of 19 who study full time. Around 40% of the basic dental treatments are paid for through the NHS, and the remaining amount is paid for through co-payments or by resorting exclusively to the private sector. Each country within the UK has its own variation in the healthcare model. Liberal professionals provide the majority of the services, generally in private offices. If they have a contract with the NHS they integrate the *General Dental Service*, which is locally coordinated by the health authorities.

Healthcare systems financed through social insurance

Countries adhering to social insurance as a means to finance healthcare obtain most of the financing through specific contributions associated with income or work. Germany, Austria, France, Lithuania and Poland are among some of the countries following this approach.

In Germany, the majority of the population (90%) benefits from non-for-profit “illness funds” that provide the right to a free-of-charge basic assistance package, with advanced options for treatment such as dental crowns and bridges, as well as orthodontics. The healthcare plans offer full coverage for all dental treatments that are clinically necessary, as well as orthodontic care to people under the age of 18. The latter even have the right to certain free prophylactic treatments. The dental treatments that go beyond these covered interventions, such as dental prostheses, are subject to co-payments. These can be reduced if the patient takes appropriate measures to keep his teeth healthy. Annually, around 75% of children and adults use the system. There is a public oral healthcare system but limited to exams, diagnostics and prevention. People who do not need or do not have the right to “illness funds” can resort to private healthcare insurance – for example, liberal professionals and individuals who exceed the maximum limit of income required to get the insurance. Coverage depends on individual agreements between the insurance company and the individuals, it is flexible and adjusted to personal needs.

In Austria, the costs of restorative and preventive basic dental treatments are generally covered by mandatory health insurance regimes, even though benefits vary across regimes. Children are covered by the same regime as their parents. In each county (“*Bundesland*”), the oral prevention programs (exclusively educational) are performed in schools, and in the majority of the counties children are examined regularly. The mandatory public health insurance offers coverage for 41 protective and surgical items, as well as 11 removable orthodontic and prosthodontic treatments. Crowns, bridges, implants, fixed orthodontic braces and other complex or cosmetic treatments have to be paid for by the patients. Around 5% of the population resorts to complementary private insurance schemes to cover part of its dental healthcare costs.

In France, all legal residents have the right to treatment through conventions – agreements between the social insurance package (*caisses*) and the dentists (98% of the French dentists have convention agreements). Children and adolescents with ages between 6, 9, 12, 15 and 18 benefit from a prevention exam (mandatory at 6 and 12 years old) covered by the healthcare insurance. This exam is directly paid for to the dentists through the social insurance package. The subsequent necessary procedures (protective treatment and sealants) are also completely covered. Preventive interventions are offered at schools until the age of 12. For other treatments, as for example orthodontics and dental prosthesis, dentists can define their own prices, and must inform patients of the estimated cost. Social insurance package (subject to prior approval for orthodontic treatment) normally covers part of those costs through refunds. In the year of 2000, the Universal Healthcare Insurance scheme (*Couverture Maladie Universelle, CMU*) was created to promote access to healthcare to the low-income population. Doctors are paid directly by the social insurance scheme and complementary insurance schemes. The prices are centrally defined by the government. Around two thirds of the population visits a dentist at least once a year.

In Lithuania, public oral healthcare services are provided for free to children and adolescents below the age of 18. Prosthodontic care (braces and crowns/bridges) for pensioners and the disabled is refunded with a fixed amount of money. For adults between 18 and 65 years old, dental treatments in the public system are partially financed by the illness fund and co-payments.

In Poland, oral healthcare services financed by common insurance are rare, as they are limited to an annual check-up. However, children below the age of 18 and pregnant women can access a wide range of services.

5. Evolution scenarios

In Portugal, the portion of direct payments in oral healthcare is excessively high. It is only possible to reduce the incidence of catastrophic and impoverishment expenditures to negligible levels when direct payments are reduced to 15-20%, or less, of the total healthcare expenditures (World Health Organization, 2010). Expenditures with oral healthcare services are the second cause of catastrophic expenditures, right after expenditures with drugs.

The Portuguese face strong financial obstacles when accessing oral healthcare services, due to the fact that they usually have to cover their treatment costs. As demonstrated before, it is not only the low-income families who are affected by this situation, as families of higher income levels also incur in catastrophic expenditures when accessing oral healthcare services. Because of this barrier, lower-income families forgo these types of services, a situation that compromises their basic right to healthcare.

The PNPSO has reduced the most vulnerable populations' difficulty in accessing oral healthcare services, especially for pregnant women in prenatal surveillance by the SNS, elderly individuals who benefit from the CSI and who are users of the SNS, children below the age of 16 who attend public schools or non-for-profit educational institutions and carriers of the HIV/AIDS virus. Additionally, the BAS have allowed for 75% refunds on the costs of acquiring and repairing removable dental prostheses, up to a limit of 250 euros in every three-year period. However, this program has been having low adherence among the population, a situation that calls for its revision.

A good healthcare financing system ensures an adequate amount of funds to provide the populations with the services they need, and protects these populations from the financial catastrophe or impoverishment associated with having to pay for these services. It also provides the correct incentives that lead providers and patients to behave in an efficient way (World Health Organization, 2007). The WHO-Europe has stated two priorities for the period between 2015 and 2020, related with the goal of strengthening the European healthcare systems: 1) to transform the healthcare services in order to face the healthcare challenges of the XXI century; and 2) to evolve in the direction of a universal healthcare coverage that frees European societies from the problem of impoverishment from direct healthcare payments (World Health Organization - Regional Office for Europe, 2015).

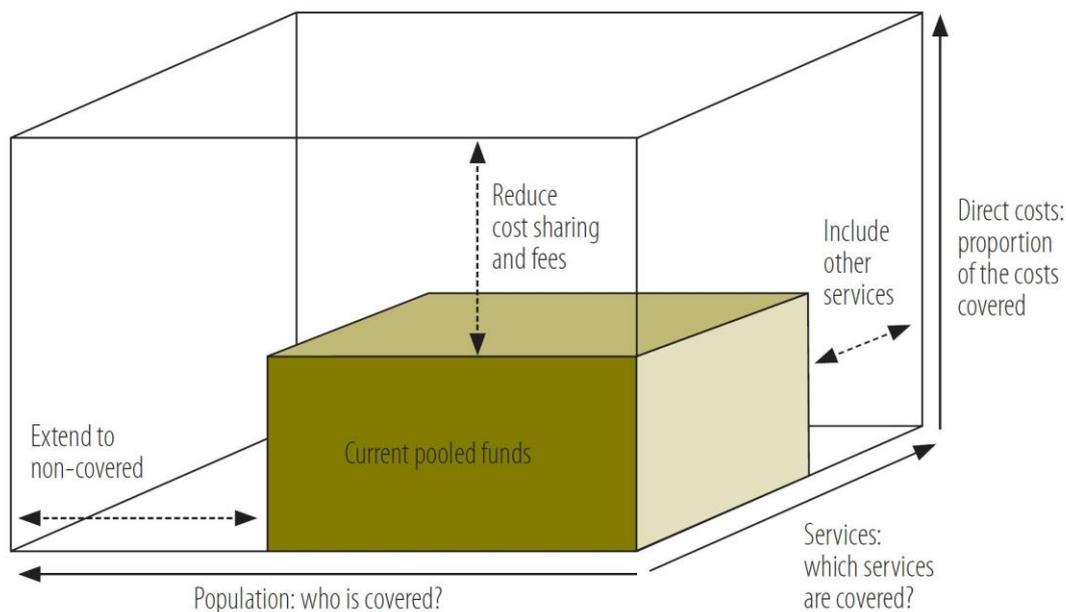


Figure 22. Three dimensions to consider when moving towards universal health coverage.

Source: World Health Organization (2010).

Considering the financial restrictions of the SNS, it is necessary to be cautious but decisive when approaching the issue of progressing towards a universal coverage. In order to better understand and plan what to do when trying to increase financial protection in accessing oral healthcare services and to increase health standards of the population, four scenarios are considered:

- Scenario A: Status quo
- Scenario B: Increasing public coverage with public provision
- Scenario C: Increasing public coverage with private provision
- Scenario D: Increasing private coverage (insurance) with private provision

These alternatives are characterized and analyzed according to the general goals of the healthcare system. Their implementation costs, namely the administration and induced-demand costs, are also analyzed.

5.1 Scenario A: Status quo

Scenario A considers the perpetuation of the current conditions and results. Given the existent financial constraints and the defined priorities for the healthcare system, it is a very plausible scenario. However,

this cannot be a rational option in terms of healthcare policy. In particular, it is not possible to anticipate that the current policy of investment and expenditure of the SNS in oral healthcare services, which is limited to vulnerable groups, will solve the problem in the access of healthcare services of the rest of the population that is not covered, namely those who have low income levels. The lack of coverage in oral healthcare directly causes low health standards among the population, especially among low-income households.

5.2 Scenario B: increasing public coverage with public provision

Scenario B considers the development of a public network of oral healthcare services, by increasing the SNS’s direct provision of services. This network would ensure, by definition, a universal coverage that would include the majority of the oral healthcare procedures (excluding strictly-cosmetic interventions), and would apply the current user charges for other procedures made in the public healthcare system. It would be developed at two different levels: 1st level – proximity oral healthcare services, developed at the level of primary healthcare; 2nd level – differentiated oral healthcare services, developed at the level of the hospital network.

The first level of healthcare would include a package of basic services and interventions such as those described in the diagram below:



Figure 23. Proposal for the basic set of proximity oral healthcare services.

Patients with additional needs would be referenced to take the 2nd level of differentiated healthcare. Given the existence of a referencing mechanism, establishing user charges should be done taking into account the situations in which this can have an impact on the decision of the patient.

The development of the primary level of healthcare implies investments in medical facilities, as well as in the recruitment of dentists. Regarding the medical facilities, it is important to remember that only 15% of the ACES consider their current equipment to be adequate to the present needs (Entidade Reguladora da Saúde, 2014). By increasing the population that is effectively being covered, as well as the package of services effectively being provided, the populations’ needs that each of these ACES would have to attend to would increase to levels that would be impossible to cope with, with the current levels of equipment. Besides, the population coverage should be defined through the establishment of priorities in terms of

the identified healthcare needs. For this, the SNS would have to hire an adequate number of professionals to gradually cover all the population, a situation that would create several challenges such as ensuring an adequate distribution of the professionals and guaranteeing the coverage of all the national territory, the attractiveness of public employment, the remuneration and career-progression regimes and the bureaucracy procedures for the hiring process. To add to all of these, there is still the needed development of a logistical network for the maintenance of the equipment and the provision of medical consumables to all medical facilities. When compared to other healthcare services provided through the UCSP, the weight of consumables in dental healthcare is very high.

The second level of healthcare would include a reinforcement of the activities performed by the hospital network. Currently, only 28 hospitals have doctors specialized in stomatology, and they are joined by a residual number of dentists. Thus, it would be necessary to reinforce the present staff and endow the rest of the hospitals with equivalent teams. This would be possible to achieve by investing in facilities and hiring adequate human resources.

This scenario deserves to be looked at despite its difficult implementation given the financial constraints of the SNS and its current priorities. Even if, with a gradual development of the network, it was possible to attract all the necessary dentists, there could be opposition to the hiring of new public workers (addition of new workers, rather than its substitution) to this area, especially when some medical and nursing specialties are known to be facing human resources needs (e.g. psychology, physiotherapy, nutrition). Furthermore, since oral healthcare has always been managed through this medical specialty, it is reasonable to assume that there will be some reaction by stomatology-specialized doctors at the level of differentiated healthcare. Therefore, the development of the model will give priority to the implementation of the 1st level of healthcare. However, the costs associated with the investment and operation (e.g. consumable clinical material and maintenance of the equipment) will need a high level of investment.

When taking into account the healthcare system as a whole, and not only the SNS, a massive investment plan of this nature would be translated into a duplication of the overall capacity of the healthcare system, with doubtful implications regarding its efficiency.

5.3 Scenario C: increasing public coverage with private provision

Scenario C regards the development of agreements between the SNS and private providers, so as to increase the public coverage and provision. There are several examples in which the SNS resorts to private service providers to pursue its goals.

As previously noted, the National Program for the Promotion of Oral Healthcare (PNPSO) has widened the SNS coverage of oral healthcare services, by creating agreements with private service providers. This

is done through the distribution of dentist vouchers to specific targets of the population, which can be used in private clinics that have an agreement with the SNS. Increasing public coverage can, therefore, be achieved by expanding the target populations covered by the dentist vouchers. As alternative possibilities, a network of private providers, which functions within the same framework as the SNS's conventioned system, could be developed, or even a refund system, in which users cover the total costs of the healthcare services in private providers and are repaid back at a later date by the SNS, could be created.

What is important to understand is that these three options (i.e. dentist voucher, network of private providers or refund system) have different associated administration costs and they create different levels of moral hazard and induced demand.

Gradual expansion of the dentist voucher

The gradual expansion of the current dentist vouchers has low administrative costs and its implementation is made easier by the experience acquired in the past. However, the dentist voucher system creates an implicit scarcity in the citizens' decision process, as the additional value that is not covered by the voucher has to be paid for directly.

Young people under 18 years of age

The law 85/2009, of August 27th, established the increase in the minimum age of mandatory schooling to 18 years old and enshrined the principle of universal coverage in pre-school education for children above the age of five in the law. Additionally, in 2010, a dispatch from the then minister of health³, harmonized the pediatric age by expanding the maximum age for receiving pediatric services at emergency services, external consult, daycare and in-patient care to 17 years 364 days old.

It is therefore reasonable to establish as a healthcare goal that young people up to the age of 18 who attend public school or non-for-profit educational institutions should: 1) have all permanent teeth properly treated and protected, namely the molars and premolars, and 2) have acquired the knowledge and competencies necessary to pursue correct practices in keeping a healthy mouth throughout their complete lifespans.

In this way, for young people with caries in permanent teeth who have benefited from the PNPSO and followed its treatment plan, one recommends that they be given a dentist voucher per academic year and cohort.

³ Despacho n.º 9871/2010, de 1 de junho.

Starting in March 1st of the present year, the dispatch n.º 12889/2015 of November 9th started to include young people of 18 years of age who had been beneficiaries of the PNPSO and had concluded the treatment plan before the age of 16. These individuals were given dentist vouchers.

Considering the impact of the PNPSO on the previous cohorts, the cases in which treatment is needed are residual and its costs are marginal. Note that, to this effect, in 2014 only 5.318 dentist vouchers were issued to young people of 16 years old, while only 4.138 were actually used.

People over 65 years old

The Tokyo Declaration on Dental Care and Oral Health for Healthy Longevity recognizes that keeping one’s oral and dental health throughout the lifespan is a crucial factor for improving one’s quality of life, protecting against non-transmissible diseases and the preventing the escalation of such diseases – which in turn can also contribute to a longer and healthier life expectancy (World Congress 2015, 2015).

According to the 4th National Health Survey, the higher we go up in the age groups, the higher the proportion of individuals who have not paid a visit to an oral healthcare professional in the last 12 months (Instituto Nacional de Estatística & Instituto Nacional de Saúde Doutor Ricardo Jorge, 2009).

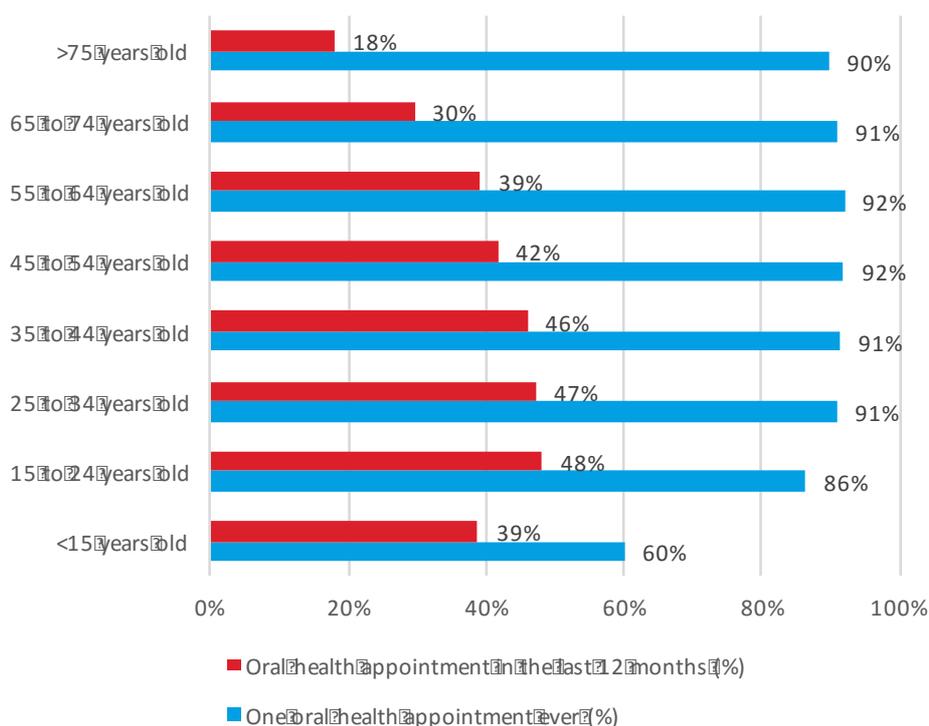


Figure 24. Proportion of residents who have paid a visit to an oral healthcare professional in Continental Portugal, in 2005/06.

Source: Own analysis with data from the 4th National Health Survey.

To the present date, the PNPSO has issued dentist vouchers to 5.173 elderly beneficiaries of the CSI in 2014 (Ministério da Saúde, 2015). On average, there were 1,48 vouchers issued for every user. It is important to point out that there were 165.825 citizens benefiting from the CSI by June of 2015 (Instituto de Informática, 2015). This means that less than 3% of the potential users have actually benefited from the program. The financial costs of issuing the 1,48 vouchers per year to all CSI beneficiaries would have amounted to 8,6 million euros. However, with the current rates of enrollment, the real costs incurred stayed at around 267 thousand euros. Therefore, before anything else, it is necessary to promote the present program of oral health and its benefits to the beneficiaries of the CSI.

The expansion of the PNPSO to all residents over 65 years old can also be equated. According to *Statistics Portugal*, in 2014 there were over 2 million residents in Continental Portugal over the age of 65 (Instituto Nacional de Estatística, 2015). The application of the current model for the beneficiaries of the CSI to all residents over the age of 65 would cost over 105 million euros.

However, in terms of vertical equity, limiting the universe of beneficiaries to low-income populations can be more sensible. Proof of household economic disadvantage is accepted by the Portuguese Ministry of Health as reason for exemption from user fees in the SNS, so as to pursue positive discrimination in accessing health benefits, in favor of lower-income families. Assuming the same proof of economic disadvantage would be used when deciding the attribution of dentist vouchers, the costs of the program would amount to around 53 million euros⁴.

Table 5. Population residing in Continental Portugal over the age of 65, in 2014.

Age group	Population
65 to 69 years old	565 076
70 to 74 years old	467 697
75 to 79 years old	423 278
80 to 84 years old	322 762
85 years old or more	254 526
	2 033 339

Source: Own analysis with data from *Statistics Portugal*, 2015.

Total toothless

The impact of being toothless in the ability to speak, to chew, in nutrition, self-esteem, social contact and quality of life is well documented. In 2005/2006 (last available data from the 4th National Inquiry of Health), over 600 thousand people over the age of 2 were estimated suffer from being totally toothless,

⁴ It is assumed that half of the population over the age of 65 us covered by the situation of economic difficulties.

which comprises 6.4% of this population. More than half of the toothless individuals were over the age of 65. This represented 27.8% of all individuals within this cohort (Instituto Nacional de Estatística & Instituto Nacional de Saúde Doutor Ricardo Jorge, 2009).

Table 6. Estimate of the total number of toothless individuals and its percentage of the total population, per age group, in 2005/6.

Age group	Total toothless	% of toothless in each age group
2 to 4 years old	0	0%
5 to 14 years old	0	0%
15 to 24 years old	0	0%
25 to 34 years old	304	0%
35 to 44 years old	13 104	1%
45 to 54 years old	35 638	3%
55 to 64 years old	101 386	9%
65 to 74 years old	188 968	19%
75 to 84 years old	220 520	37%
85 years old or more	73 295	48%
	633 216	6,4%

Source: Own analysis with data from the 4th National Inquiry of Health.

Outside the scope of the PNPSO, the BAS have allowed the refund of the costs of acquiring and repairing prostheses, up to a limit of 250 euros, to 1.462 elderly individuals. This had the potential to cost up to 3.8 million euros, but ended up costing only 220.114€ (Ministério da Saúde, 2015). The fact that this is a refund system, which means that the beneficiaries have to cover the complete costs at an initial stage, makes its use limited since a lot of individuals are not able to cover the initial investment, even if it is reimbursed at a later date. Therefore, it makes sense to substitute the current refund model with a subsidization model, which, besides preventing this exclusion of lower-income individuals, also has lower administrative costs.

Subsidizing the price of prostheses to all toothless individuals is estimated to cost 52.8 million of euros. If coverage is restricted to only SNS users who can make proof of economic disadvantage⁴, the estimated value drops to 26.4 million euros.

The inclusion of oral healthcare services for toothless individuals could also be achieved through dentist vouchers (two per year) to all individuals who are completely toothless. This would represent a potential investment of 32.8 million euros. If coverage is restricted to only SNS users who can make proof of economic disadvantage⁴, the estimated investment would drop to 16.4 million euros.

Diabetes

When poorly monitored, diabetes is a well-known risk factor for the development of periodontal diseases. Evidence shows that people with type 1 or type 2 diabetes develop more frequent and more intense gum disease than the rest of the population. A bidirectional relationship is also known to exist between diabetes and periodontal diseases. Recent evidence suggests, for people with diabetes *mellitus* of type 2, slight but significant improvements in the levels of sugar in the blood can occur when pre-existent gum diseases are treated (Patel, 2012).

In 2013, in the network of primary healthcare facilities of the SNS in Continental Portugal, there were 765.901 registered users with Diabetes, (of which 55.4% in the personalized healthcare units – UCSP and 44.6% in the family health units – USF) (Sociedade Portuguesa de Diabetologia, 2014).

For a model of oral healthcare based on the monitoring and treatment of the diabetic patient in the SNS, an annual emission of two dentist vouchers would be necessary.

Assuming that the rate of use of dentist vouchers is around 1.48 vouchers per user, the financial impact of such measure is estimated to be around 40 million euros. When reducing the coverage to SNS users who can make proof of economic disadvantage⁴, the estimated value would drop to 20 million euros.

Emergency care

Some of the most common situations that need dental emergency care are: teeth pain, accidentally broken tooth, dental infection or inflammation, gum pain and dental abscess. All these situations of pain and trauma are reasons for an emergency visit to the dentist. As such, we propose the possibility of issuing a dentist voucher by the family doctor, anytime the Emergency Service of the reference hospital does not have a dentist or a stomatology-specialized doctor.

The financial impact of this measure becomes impossible to establish due to the absence of concrete data on the number of emergency occurrences in oral healthcare.

Estimates of the financial impact by measure

Table 7. Estimate of the financial impact of the different proposals for enlarging the coverage of the PNPSO.

Enlargement	Universe	Financial Impact (M€)
>18 years	Total	0,35
	Total	105,3
>65 years	Economic Difficulties	52,7
	CSI	8,6
Total toothless	Total	32,8
	Economic Difficulties	16,4
Subsidizing of complete prostheses	Total	52,8
	Economic Difficulties	26,4
Diabetics	CSI	3,8
	Total	39,6
Emergency	Economic Difficulties	16,8
		?

Source: Own analysis.

Network of private providers contracted by the SNS

Up until October of 2013, the network of private providers with agreement with SNS (entidades convencionadas) was based on a special contracting model, the adhesion contract. In this contract, private entities, either individual or collective in their legal nature, only had to subscribe and meet the requirements included in its clauses, which were approved by the Ministry of Health. In October of 2013, a new contractual framework for the provision of healthcare services was approved. Specifically, the Code of Public contracts was applied, which made all private and third-sector providers abide to certain rules and mechanisms, created to ensure a transparent environment, while also ensuring an adequate degree of functioning of the rules of the market. Additionally, all the procedures started to take into consideration the area of healthcare provision and the nature and characteristics of the market to which the convention is being targeted. In markets with a low degree of concentration and/or with significant competition, a specific tender procedure must be privileged, over the adhesion contract, which is more adequate for markets with a lower degree of competition.

Similarly to the ADSE, the implementation of this system can be achieved through a payment option based on the medical procedures that were provided, and which ones are contracted. Let's recall that the annual rate of use of the ADSE network for dental healthcare is 12.2% and the annual rate of use of the overall dental healthcare services (i.e. ADSE network and reimbursement scheme) is of 27.4% (ADSE, 2015). Despite the differences between socio-demographic characteristics of both populations, we can extrapolate what would have been the potential costs to the SNS if it were to use this model. In order to obtain more sensible figures, we furthermore present the financial impact that would exist if 50% of the population used the system. Note that the beneficiaries cover an additional 20% of the costs after the costs covered by the ADSE (co-payment). Thus, the estimates would have to be increased by 20%.

Table 8. Estimates of the financial impact to the SNS of applying the ADSE costs.

Utilization scenarios	Annual rate of use	Extrapolation of Financial Impact (M€)
ADSE Network	12,4%	69,4
ADSE Network + free ADSE	27,4%	153,2
Hypothetical rate of use	50,0%	280,0

Source: ADSE (2015) – Own analysis.

Reimbursement Model

The implementation of a reimbursement model assumes that the patient has a free choice over its healthcare provider, pays for the healthcare services received and requests the reimbursement of its costs. The Payer then refunds these costs according with the predefined price list and rules. To each reimbursement procedure corresponds a maximum refundable amount. The patient then covers the difference between this maximum amount and the total cost of the procedure.

The reimbursement scheme of the ADSE functions within this framework. The annual rate of utilization of the ADSE reimbursement scheme is of 10.1%, and it is compensated by resorting to the ADSE Network providers. Similarly, to the extrapolation made in the case of the network of private providers contracted by the SNS, we can assume the costs ADSE has with this sector as a base to calculate an estimate for the potential expenditure the SNS would have if it were to adopt this model. It is worth reminding the differences between the socio-demographic characteristics of both populations, which can influence the pattern of utilization of the oral healthcare services. In order to obtain more sensible figures, we furthermore present the financial impact that would exist if 50% of the population used the system.

Table 9. Estimates of the financial impact to the SNS of applying ADSE costs.

Utilization scenarios	Annual rate of use	Extrapolation of Financial Impact (M€)
ADSE reimbursement scheme	10,1%	69,4
ADSE Network + reimbursement scheme	27,4%	188,3
Hypothetical rate of use	50,0%	343,9

Source: ADSE (2015) – Own analysis.

The model of reimbursement is very costly from an administrative perspective, demanding predefined limits and an authorisation system in order prevent incentives for excessive utilisation, including fraud and unnecessary utilisation. Surely, the refund model can define the amount of the dentist voucher as the limit and, in this case, the financial capacity of the citizen to make the initial direct payment becomes determinant. In this situation we would be promoting a highly regressive healthcare model.

5.4 Scenario D: increasing private coverage (insurance) with private provision

Scenario D concerns the increase in the population covered by health insurance deals that cover oral healthcare, reducing the financial risk to families. The Basic Law of Healthcare establishes that the law creates incentives to the establishment of health insurance.

This intention can be promoted by various ways, including through the public subsidizing of health insurance premia or the creation of incentives (in taxes and others) to the insurance sector.

To this extent, the government can negotiate with the insurance sector the creation of an insurance package that is complementary in nature, and that would allow basic coverage of oral healthcare, subsidizing the premia of disadvantaged households.

These alternatives have the potential to allow for a reduction of the financial risk of households, the increase in the coverage of oral healthcare services, increasing the profitability of the existent private providers and a tighter control of expenditures. However, the current political and social sentiment is more favorable to public provision or public contracting, and against resorting to the insurance sector for ensuring functions related to the public good.

6. Proposal | National Network of Oral Healthcare Services

The WHO recommends healthcare systems to be targeted at disease prevention and primary healthcare services, with special emphasis on the satisfaction of the needs of the most disadvantaged segments of the population (Petersen, 2008; "Prevention is better than treatment," 2015). The goal of governments, healthcare professionals and educators, should be to mobilize the population to a greater understanding and information on oral health, as well as on prevention of oral diseases. Additionally, oral healthcare services that integrate prevention of oral diseases, early diagnosis, treatment and rehabilitation interventions of oral health problems, including periodontal diseases, should be created. These should be managed according with the needs of the population and the available resources. Programs targeted at the prevention and treatment of oral diseases should also be put in place, especially for the most debilitated population (children and adolescents, disabled people, elderly individuals, among others).

In Portugal, the risk of impoverishment of those patients who seek oral healthcare services, the mediocre oral healthcare standards and the expectations of the population, create an opportunity for the various actors to discuss the creation of a national network of oral healthcare services (Rede Nacional de Cuidados de Saúde Oral – RNCSO), in which prevention is one of the priorities and high-quality treatment is tailored to the long-term needs of the 21st century patient.

The development of a RNCSO requires its integration in the other community levels, in order to offer a comprehensive response from the healthcare system to the non communicable diseases. The presence of comorbidities, including oral diseases, can influence the development, evolution and response to the treatment of the main non communicable diseases and should be dealt with through integrated approaches (World Health Organization, 2013). In this context, the RNCSO should be integrated in the primary healthcare network, preferably through the optimization of the existent healthcare establishments at this level of healthcare.

Additionally, dentists have been showing interest in integrating the SNS through the creation of a specific career. However, it is reasonable to integrate these professionals as senior healthcare technicians through the creation of a specific branch of activity: dental medicine. As such, the Decree-Law n.º 414/91, of 22 of October, later changed by the Decree-Laws n.º 241/94, of 22 of September, and n.º 501/99, of 19 of November, deserves some attention. According to this decree, the recruitment of staff would be regulated by the Decree-Law n.º 213/2000, of September 2nd, which establishes the regime of recruitment and selection of staff of the senior healthcare technicians career.

This integration could be achieved through the creation of Oral Healthcare Units (Unidades de Saúde Oral – USO). According with the established in paragraph f) of article 7 of the Decree-Law n.º 28/2008, of 22nd

of February, the ACES can comprise new units or services that become necessary, if proposed by their respective ARS, I. P., and approved by dispatch by the Ministry of Health. These units would be excluded from the possibility of exercising private medicine. The issue of whether the doctors integrated in these units would be working there full-time or part-time, either on an exclusivity regime or otherwise, remains to be defined. It is however crucial to prevent the creation of perverse incentives in the provision of this service, and to ensure that all involved parts are aligned in their interest in providing oral healthcare services to the populations, through the SNS.

These units would count with dentists (who, similarly to the USF model, would coordinate the units), oral hygienists and dental assistants. To this effect, the USO could support the reconversion or recruitment of technical assistants into dental assistants through specific training programs.

Regarding the information and communication systems, the USO would share the data produced by using the primary healthcare providers' information system (e.g. SClinico), considering also its integration with the SISO.

The USO have a defined portfolio of services, but they do not have capacity to offer stomatologic prostheses. However, it is important that economically disadvantaged citizens will be able to benefit from a system of easier access to these services (e.g. additional health benefits) as, for example, the emission of a prosthesis voucher.

The contracting model with the USO should also consider defining:

- The covered population;
- The minimum services-package, in which basic oral healthcare services are included (already previously identified, Figure 23);
- The compensation model;
- The criteria for referencing in hospitals and private dental healthcare units.

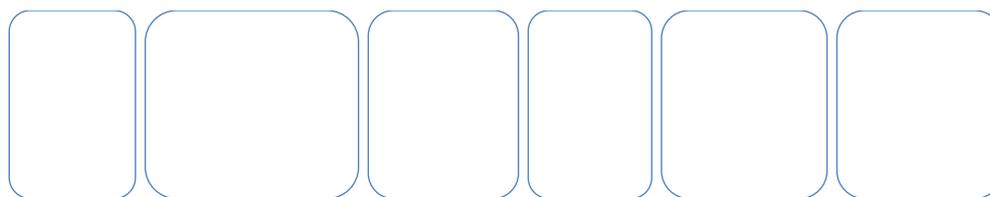


Figure 25. Package of services (yet to be defined) for the Oral Healthcare Units (USO).

The definition of the population is critical for the development of the RNCSO. The network should be universal – a structural requirement that comes from the SNS. Additionally, the development of healthcare systems, or parts of systems, specifically targeted at certain groups of the population, tend to generate inequalities and asymmetries themselves. According to Marmot (2013), *“an healthcare system for the poor is a poor healthcare system; an education system for the poor is a deficient education system”*. One can argue that the segmentation of the poorer population for special healthcare causes damage in the social cohesion and ignores the social gradient in healthcare. However, initial priorities for the universal coverage, according with the healthcare deprivation, can be established, as shown previously.

In an initial phase, given the observed deficiencies in the oral healthcare services, it will make sense to establish clinical priorities, to be referenced by the family doctors. As such, we suggest that, for example, patients with diabetes, neoplasms, cardiac pathology or chronic breathing, renal insufficiency in dialysis or peritoneal dialysis and the transplanted can be prioritized for oral healthcare services.

In this initial phase, the rules for accessing dental medicine appointments are the referencing of these priority patients to an initial check-up and a definition of a treatment plan. Daily periods for acute care should also be established (minimum of 1 hour). The scheduling of acute care should be done through referencing by the family doctor, and the maximum time for response should be 24 hours. According to the data gathered concerning the use of these services, adjustments can be done according to the effective demand, especially in regards to the introduction of mechanisms that promote prevention (regular visits to oral healthcare services) rather than its use in acute situations that would otherwise be preventable by regular appointments.

Concerning primary healthcare services, there is a broad consensus over applying mixed forms of payment. Considering the nature of preventive care, capitation is one of the key components of these mixed payment alternatives. Capitation is necessarily adjusted by the characteristics of the population. In order to mitigate the negative effects of the capitation (e.g. under-provision of healthcare, over-referencing), it is combined with models of payment by performance and/or payment by act, besides the monitoring mechanisms for the obtained results and associated quality. Payment by performance depends on the development of monitoring indicators that should be clearly defined in due time, obtained on a periodical and routine fashion and result in regular and automatic processes of monitoring.

Implementation of pilot project

The implementation of this proposal should be made through the creation of a pilot project, to last between 6 months and 1 year, with the goal of increasing the access to oral healthcare services. Specifically, to the target population, it is intended that:

- A. The number of users with at least one annual oral evaluation increases;
- B. The number of users that report unmet oral healthcare needs decreases;

The implementation of the pilot project should be achieved through the creation of USO, and it should go through a rigorous planning process so that it can be adequately evaluated.

Identification of the target-public

On an initial phase, the target-public will be defined through priority clinical criteria, determined by the family doctor. As such, in the list of patients, the defined family doctor would prioritize patients with diabetes, neoplasms, cardiac pathology or chronic breathing, renal insufficiency in dialysis or peritoneal dialysis, and the transplanted, referencing them for receiving oral healthcare services. Given the complexity of the patients to whom healthcare services should be provided, support from the family healthcare team is crucial for obtaining satisfactory health results. Still in this phase, the USO would define at least one hour a day for acute care.

On a second phase, the target-public would be enlarged to a mimicked list of the family doctors' list of patients. Despite the fact that international quality standards establish one doctor for every 1.500 users as the minimum level of quality, one dentist for a maximum of 1.900 users is also reasonable to consider. This association would allow synergies between the oral healthcare team and the family health team to be improved.

Responsibility and Implementation

The main responsibility for the execution of the pilot project would belong to the ARS of *Lisboa e Vale do Tejo* and *Alentejo*. All the management of the project should be pursued by these entities, and two project managers should be appointed (one for each ARS). The many departments inside the ARS should provide support to the two project managers. It is important to remember that the success of the recruitment of dentists (senior healthcare technician career) and dental assistants (technician assistant career), the processes of refurbishing of the medical facilities, the acquisition of equipment and consumables and the training of the staff depends on the dedication and alignment of all the structure of the ARS.

At the execution level, people responsible for the ACES and USF involved should be appointed, and these should answer before the project manager and ensure the adequate implementation of the project locally.

The implementation of the project should include gathering information needed for its permanent monitoring and evaluation, so as to allow quick adaptations when needed. The creation of a monitoring process should be regarded as an integral part of the pilot experience.

The Portuguese Dental Association should work as a consulting entity to the pilot project, providing all the needed technical and scientific advisory.

The ACSS and the DGS should be kept informed and monitor the pilot project closely, providing all the necessary support to the success of the project. Governmental support and monitoring would also be important.

Locations of implementation

Desirably, this process should be replicated in different regions of the country, mimicking its urban and rural composition. Ideally, each USO should work in an environment in which the primary healthcare services are strongly established, in this way avoiding that external circumstances contaminate the adequate functioning of the project. Additionally, the locations in which the USO are established should meet certain requirements in terms of equipment and quality of the medical facilities.

Monitoring and Evaluation

Parallel to the intervention by the pilot project in the target population, a prospective control case study should be implemented, by creating a control population with similar sociodemographic characteristics as the treatment group, but who did not receive treatment. This control group should be equally followed during the period of intervention.

The development of the project indicators should follow a conceptual model of Donabedian: Structure, Process and Results (Donabedian, 1988). By structure one means the resources allocated to the provision of healthcare services or the financial resources allocated to the project. As examples of the structure indicators we have:

1. The number of dentists recruited in the TSS career
2. The number of dentist assistants with adequate training
3. The number of USO created with the adequate conditions
4. The percentage of USO created with the adequate conditions
5. The investment costs per USO
6. The operational costs per USO
7. The costs for the user patients
8. The costs per appointment

At the process level, it is important to assess whether the good practices are being followed. As examples of process indicators we have:

9. The number of attended patients
10. The number of patients per dentist
11. The number of different procedures realized
12. The number of different procedures realized per dentist
13. The number of different procedures realized per patient
14. The number of different procedures realized per appointment
15. The average time of appointments
16. The median waiting time between the referencing by the family doctor and the first appointment
17. Percentage of referencing situations that complete the process

In terms of the results, one will evaluate the impact of the service in the health standards. However, it is important to take into account that the pilot project has a reduced duration, which limits the use of indicators that report the impact on the medium-run. Therefore, the indicators can be associated with the established goals:

18. The percentage of users with at least one annual oral evaluation
19. The percentage of users with selected diseases with at least one annual oral evaluation
20. The percentage of users that report unmet oral healthcare needs
21. The percentage of users that report unmet oral healthcare needs due to the procedures being too costly
22. The percentage of users that report unmet oral healthcare needs due to waiting lists
23. The percentage of users that report unmet oral healthcare needs due to the distance to the providers

Along with all these indicators, others related to the user satisfaction (perceived quality) and to the involved professionals' satisfaction (including the various professionals of the ACES) should be added. Socio-demographic and clinical data of the target population (e.g. gender, age, income, education, diagnoses) should be gathered to better analyze the impact of the intervention. The information gathered on the implementation of the project should be structured as panel data, so as to allow for a continuous monitoring of the target patients' use of oral healthcare services. It will also be important to assess whether the existence of this coverage induces a regular use of preventive oral healthcare services. If so, this would in time translate into better oral health outcomes of the population and a lower number of avoidable acute situations.

Final remarks

The creation of the SNS, in Portugal, greatly improved access to quality healthcare services, and significantly contributed to better health standards of the Portuguese population. This impact was not, however, reflected in every area of healthcare in the same way. Oral healthcare services remained mainly private in nature, both in their provision and in their financing (and, therefore, in their access). Information gathered on the use of oral healthcare services systemically revealed a predominance of private provision (the share of oral healthcare services provided in the private sector is consistently above 90%) and the supremacy of direct payments from households. European surveys on the wellbeing of populations often detect unmet oral healthcare needs among the Portuguese population.

The acknowledgement of this situation has led to the creation of the PNPSO. However, this program was not enough to stop the Portuguese people from ranking on the top of the list of developed countries with the worst oral health outcomes, and the unmet oral healthcare needs, of different natures, remain. The financial barrier in accessing oral healthcare services is one of the most important barriers, if not the most important one, to a better oral health standard.

Aspects related to illness protection and financial constraints in accessing healthcare services are among the reasons that justify government intervention through healthcare public policy. This creates an opportunity for improvement in the oral healthcare services that is important to seize. In order to do so, it is necessary to develop strategies to promote adequate preventive oral hygiene practices, and the access to oral healthcare services whenever these are needed.

The creation and analysis of different intervention proposals in this area was the challenge the Portuguese Dental Association had for this working team, and it was tackled throughout the present document. An initial set of possibilities for intervention were considered, from which the four most feasible ones were closely evaluated. Of these, one emerged as the most promising one, leading to the creation of a more extensive analysis and proposal.

The presentation of the proposals for discussion involves an evaluation of the demand conditions, including the importance of financial protection against the high volume of direct payments. From the evolution of the healthcare sector in Portugal since the creation of the SNS, it has become quite clear that there are oral healthcare needs that create a significant financial burden for households. As a result, a wide range of oral healthcare needs remain unmet, especially among the households of lower income or lower education standards, and prevention habits and procedures occur much less often than desirable. However, increasing financial protection can lead to the risk of moral hazard (excessive utilization), induced demand and (potential) fraud, which probably have been the reasons for the absence of

widespread mechanisms of private insurance in this area. Therefore, the lack of financial protection is not susceptible to be solved without an active intervention on the part of the SNS.

The characterization of the providers of oral healthcare services is also necessary to consider. The historical evolution of the SNS has created a technical incapacity to attend to the needs of the population in terms of oral healthcare. However, there are plenty of human resources and available equipment in the private sector that can be mobilized to a better oral health standard of the Portuguese population.

Establishing the goal of the creating a national network of oral healthcare services is not hard to do. However, defining strategies to achieve that goal and that are consensual between the various actors involved, is where all the attention must be focused on.

Among the several possible options, maintaining the current situation is clearly incompatible with achieving the goal of a national oral healthcare network. Therefore, one must search for active intervention strategies.

Direct investment from the SNS in internal capacity, acquiring equipment and hiring oral healthcare professionals is, naturally, one of the possibilities. However, this option has the disadvantage of implying a duplication of the investment relative to the current capacity. Hence, this option does not appear to achieve the established goal of creating a national network of healthcare services with the lowest societal cost.

A different option would be to have the SNS ensuring the financial protection of individuals by resorting to agreements with private healthcare providers. The present information-system conditions and technical knowledge allow for the possibility of establishing contractual relationships between the government and these private providers, with greater or lesser depth, in which mechanisms to control moral hazard and induced demand are created, as well as mechanisms for evaluating the quality of the services provided. This option is very demanding in terms of the relationship between the actors who ensure the financial protection and those who provide the oral healthcare services.

A fourth option involves ensuring the financial protection of individuals through market mechanisms (insurance) that are contracted with private providers. Recent experience has shown that this option is not possible to be implemented in a natural and widespread fashion, nor in a way that ensures the goal of creating a national oral healthcare network.

The analysis to the four possible options leads to the conclusion that the public financial coverage (through the SNS) of the costs of using the current private network of oral healthcare providers (through an adequate contractual relationship) is the option with the lower overall costs for the society.

It is recommendable that, before a contractual process is generalized, its main characteristics are tested in pilot experiences. Note that this process can go from simply creating an extension of the already-existing dentist voucher, to a closer integration of the oral healthcare services in the SNS providers (in which case, investments from both parts are needed).

All these considerations lead to the recommendation of increasing public coverage with private provision, with the development of a relationship with providers that a) attends to the unmet needs of the population, namely in the area of prevention; b) guarantees the existence of mechanisms of regular assessment to the quality of the provided oral healthcare services; c) mitigates (or eliminates) the situations of moral hazard and induced demand; and d) recognizes the relevance of the specific investments made by both parts. Given the fact that this process is highly demanding, pilot experiences that are carefully evaluated in a transparent and scientifically robust fashion should be promoted. The proposal for the creation of the network of oral healthcare services (Rede Nacional de Cuidados de Saúde Oral – RNCOS) is an initial contribution to the definition and implementation of the recommended strategy.

References

- Administração Central do Sistema de Saúde. (2015). *Inventário dos profissionais do Setor da Saúde 2014*. Retrieved from Lisboa:
- ADSE. (2015). *Relatorio de Atividades 2014*. Retrieved from Lisboa:
- Barros, P., Machado, S., & Simões, J. (2011). *Portugal: Health system review. Health Systems in Transition*. Retrieved from Copenhagen, Denmark: http://www.euro.who.int/_data/assets/pdf_file/0019/150463/e95712.pdf
- Borges, A. R. (2013). *Catastrophic health care expenditures in Portugal between 2000-2010: assessing impoverishment, determinants and policy implications*. (Master's Degree in Economics Work Project), NOVA School of Business and Economics, Lisboa. Retrieved from <http://fesrvsd.fe.unl.pt/unlfe/Monografias/2014/2014-0056.pdf>
- Brinkerhoff, D. W., & Bossert, T. J. (2013). Health governance: principal-agent linkages and health system strengthening. *Health Policy Plan*. doi:10.1093/heapol/czs132
- Direção Geral da Saúde. (2016). *Programa Nacional de Promoção da Saúde Oral*. Retrieved from Lisboa:
- Direção-Geral da Saúde. (2015). *A Saúde dos Portugueses: Perspetiva 2015*. Lisbon: Direção-Geral da Saúde.
- Donabedian, A. (1988). The quality of care: How can it be assessed? *Jama*, 260(12), 1743-1748. doi:10.1001/jama.1988.03410120089033
- Entidade Reguladora da Saúde. (2013). *Acesso, concorrência e qualidade no setor convencionado com o SNS*. Retrieved from Porto: https://www.ers.pt/uploads/writer_file/document/886/Relat_rio_Conven_es.pdf
- Entidade Reguladora da Saúde. (2014). *Acesso, Concorrência e Qualidade no Programa Nacional de Promoção de Saúde Oral*. Retrieved from Porto:
- Eurostat. (2015). *EU Statistics on Income and Living Conditions*. Retrieved from: <http://www.eui.eu/Research/Library/ResearchGuides/Economics/Statistics/DataPortal/EU-SILC.aspx>
- Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, . . . Bray F. (2013). GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11. Retrieved from <http://globocan.iarc.fr/>
- Instituto de Informática. (2015, 24-07-2015). Estatísticas da Segurança Social. Retrieved from <http://www4.seg-social.pt/estatisticas>
- Instituto de Seguros de Portugal. (2013). *Estatísticas de Seguros 2012*. Retrieved from Lisboa, Portugal: http://www.isp.pt/Estatisticas/seguros/estatisticas_anuais/historico/EstatSeguros2012.pdf
- Instituto Nacional de Estatística. (2015). População residente (N.º) por Local de residência (NUTS - 2013), Sexo e Grupo etário; Anual - INE, Estimativas Anuais da População Residente. Retrieved 8 de janeiro de 2016, from Instituto Nacional de Estatística, https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_indicadores&contexto=pi&indOcorrCod=0008273&selTab=tab0
- Instituto Nacional de Estatística. (2013). Contas Nacionais Portuguesas. Retrieved 12/03/2013, from Instituto Nacional de Estatística: Portugal Statistics http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_contas_nacionais&contexto=cs&selTab=tab3&perfil=97154797&INS T=116634832
- Instituto Nacional de Estatística. (2015a). *Estatísticas da Saúde 2013*. Lisboa: Instituto Nacional de Estatística.
- Instituto Nacional de Estatística. (2015b). *Inquérito às despesas das famílias - 2000, 2005, 2010*.
- Instituto Nacional de Estatística, & Instituto Nacional de Saúde Doutor Ricardo Jorge. (2009). *Inquérito Nacional de Saúde 2005/2006*. Lisboa: Instituto Nacional de Estatística, IP.
- Kravitz, A. S., Bullock, A., Cowpe, J., & Barnes, E. (2015). *Manual of Dental Practice 2015*. Retrieved from Cardiff: <http://www.eudental.eu/component/attachments/attachments.html?task=download&id=1367>

- Kronenberg, C., & Barros, P. P. (2014). Catastrophic healthcare expenditure – Drivers and protection: The Portuguese case. *Health policy (Amsterdam, Netherlands)*, 115(1), 44-51.
- Marmot, M. (2013). Europe: good, bad, and beautiful. *The Lancet*, 381(9872), 1090-1091. doi:10.1016/s0140-6736(13)60749-7
- Ministério da Saúde. (2015). *Relatório anual sobre o acesso a cuidados de saúde nos estabelecimentos do SNS e entidades convencionadas 2014*. Retrieved from Lisbon:
- Observatório da Saúde Oral. (2015). *Os números da Ordem 2015*. Retrieved from Porto:
- Ordem dos Médicos Dentistas. (2015). *Barómetro Nacional de Saúde Oral 2015*. Retrieved from Lisboa:
- Patel, R. (2012). *The State of Oral Health in Europe*. Retrieved from http://www.wfpha.org/tl_files/doc/about/OHWG/BOHEP.pdf
- Petersen, P. E. (2008). World Health Organization global policy for improvement of oral health – World Health Assembly 2007. *International Dental Journal*, 58, 115-121. doi:10.1922/IDJ_1930Petersen07
- Prevention is better than treatment. (2015). *Bull World Health Organ*, 93(9), 594-595. doi:10.2471/BLT.15.020915
- Saksena, P., Hsu, J., & Evans, D. B. (2014). Financial risk protection and universal health coverage: evidence and measurement challenges. *PLoS Med*, 11(9), e1001701. doi:10.1371/journal.pmed.1001701
- Siddiqi, S., Masud, T. I., Nishtar, S., Peters, D. H., Sabri, B., Bile, K. M., & Jama, M. A. (2009). Framework for assessing governance of the health system in developing countries: gateway to good governance. *Health Policy*, 90(1), 13-25. doi:10.1016/j.healthpol.2008.08.005
- Simões, J., Teixeira, M., Barros, P. P., Pereira, J., Moreira, P. K., Ferreira, A. S., . . . Silva, S. N. (2007). *Relatório Final da Comissão para a Sustentabilidade do Financiamento do Serviço Nacional de Saúde*. Retrieved from <http://www.sg.min-saude.pt/NR/rdonlyres/050CB0A2-7ACC-4975-A1E4-4312A1FBE12D/0/RelatorioFinalComissaoSustentabilidadeFinanciamentoSNS.pdf>
- Sociedade Portuguesa de Diabetologia. (2014). *Diabetes: Factos e Números 2013*. Retrieved from Lisboa:
- TNS Opinion & Social. (2010). *Special Eurobarometer 330 “Oral health”*. Retrieved from Brussels:
- Watt, R. G. (2012). Social determinants of oral health inequalities: implications for action. *Community Dentistry and Oral Epidemiology*, 40, 44-48. doi:10.1111/j.1600-0528.2012.00719.x
- World Congress 2015. (2015). Tokyo Declaration on Dental Care and Oral Health for Healthy Longevity [Press release]
- World Health Organization. (2000). *The World Health Report 2000: health systems: improving performance* (W. H. Organization Ed.). Geneva, Switzerland: World Health Organization.
- World Health Organization. (2007). *Everybody business: strengthening health systems to improve health outcomes: WHO’s framework for action*. (H. S. a. S. (HSS), Trans. W. D. P. Services Ed.). Geneva, Switzerland: World Health Organization
- World Health Organization. (2010). *The world health report: health systems financing: the path to universal coverage*. Geneva, Switzerland: World Health Organization.
- World Health Organization. (2013). *Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020*. Geneva: World Health Organization,.
- World Health Organization - Regional Office for Europe. (2015). *Priorities for health systems strengthening in the WHO European Region 2015-2020: walking the talk on people centredness*. Copenhagen: World Health Organization - Regional Office for Europe.