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Special Issue: International Health Policy: What we can learn about international experiences?

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Editorial

INTERNATIONAL HEALTH POLICY: WHAT WE CAN LEARN ABOUT INTERNATIONAL EXPERIENCES?

The emergence of the pandemic caused by the SARS-CoV-2 virus, which causes the COVID-19, has been testing society and health systems all over the world. This situation has profoundly changed the way we live, with global impacts on the social, economic, cultural and political sectors.

Public health policy is in the "eye of the hurricane". It is from public health policies that we currently depend on. Our relationships in the affective, work and social domains are strongly influenced by public health policies.

The set of research work presented in this issue was prepared in a period prior to the pandemic. They intend to disseminate lessons on international health policies for our context, at different levels of health care provision. The search for good practices is a constant activity that can also be transposed in the response to the pandemic: the comparison with different sets of countries in the pre and post lockdown phases has been pointed out as one of the determining factors of the Portuguese capacity in flattening the transmission curve.

COVID-19's interference in the response to other diseases has been a relationship that is established mainly at two levels: the first where the need for response puts pressure on and make more visible some of the problems already existing in the health system and; the second, through the opportunity cost generated by the response to COVID-19, shifting the attention from traditional conditions and which may lead to worse disease severity stages in the medium and long terms.

In the first article, a service model centered on users is proposed that allows an integrated relationship between social security and health. A solution that can provide a better preparation not only for emerging responses but also for all other pathologies that the risk population who lives in residential homes typically presents.

During the response to the pandemic situation, we have heard a common expression in public health, but whose generalization in society, however, was not a reality: risk stratification. The identification of risk groups and the definition of differentiated policies can contribute to mitigate the probabilistic differences between population groups. The second article, which identifies hospitalizations that in addition to being potentially avoidable, are also recurrent may be an example of this practice.

In the third article, a descriptive comparison is made on primary health care reforms in Brazil and Portugal. These are the pillar of health care provision; the reforms, with common features, do not always have common results applied in different contexts. If it is interesting to compare results between countries, in addition to what happens in each country, it is also crucial to reinforce the role of Global Health. Regardless of the outcome of the current period, one of the clearest evidences that will certainly be discussed in a post-pandemic period is the need to reach deeper levels of international cooperation in matters of health security. Health and disease have no borders and the circulation of people, goods and services in the world has never been more frequent and intense. This pandemic brings the need for a comprehensive global approach to the health of living beings.

Another analogy in this pre and post analysis (which in practice has a lot of continuity) is to reflect on the conditions provided to the managers of Portuguese public health organizations in the last years. Their scope of action was very restricted, through the application of an exogenous budget decision model, which was centered on the Ministry of Finance. The speed of this sudden change, demanded that models of action based on trust must be provided, allowing a fast adaptation of the health units. In this context, the creation of adequate incentives is a decisive key. The fourth article presents an example of a payment for performance approach, requiring a natural space for a gradual learning of these models.

The importance of public health policies, which are now clearer for a larger group of people, was already present in the health system through its disease prevention and health promotion actions aimed at populations, in a transdisciplinary way. The presentation of Accountable Care Organizations, in the last article, is an example of this increasingly pressing need to think in delivery systems as comprehensive and user-centered units.

For the worst reasons, public health policies are having a central role, perhaps in the greatest crisis that the living generations possibly faced. In a crude way, we experienced its importance and saw the

need to have a set of resources, knowledge, and capacity for action, in order to increase national preparedness and robustness of our National Health Service.

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A services delivery perspective to the provision of long-term care in Portugal

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ABSTRACT

Integrated care is of particular relevance to the delivery of long-term care services for older people in order to optimally respond to their often highly diversified health and social care needs. This study set out to develop a comprehensive overview of long-term care in Portugal from a services delivery perspective that dually captures health and social services. Information was consolidated from a wide range of sources including international databases, scientific and grey literature, facility visits, semi-structured group interviews and roundtable discussions with key stakeholders. The findings report the burden of chronic, noncommunicable diseases and disabilities facing Portugal's older population, in particular women. The current model of care is explored by analyzing available health

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and social services for older people, care pathways, needs assessment protocols, organization of providers, management and improvement of services, together with system arrangements for governing, financing and resourcing. The findings signal the need to reorient the model of care towards a person-centred approach and to link-up health and social services around unified needs assessments, explicit entitlement of care and beneficiary pathways and common quality and performance assessment mechanisms. This study has important policy relevance for Portugal's continued development of long-term care services.

Keywords: Long-Term Care, Health Services for the Aged, Assisted Living Facilities, Delivery of Health Care, Integrated, Health Services, Portugal.

JEL classification: I14, I18, I31, J11.

1. INTRODUCTION

1.1. The context of long-term care in Portugal

As of 2017, life expectancy in Portugal has reached 81.4 years and over 21% of the population was 65 years of age or older; both averages are slightly higher than the European Union as a whole (The World Bank, 2019). Most gains in life expectancy since 2000 have been after the age 65: for Portuguese women life expectancy at age 65 reached 21.7 years and for men it was 18 years, up from 19.1 and 15.4 in 2000, respectively (OECD and European Observatory on Health Systems and Policies, 2017). Concomitant with low fertility rates, high emigration rates, and a heightened burden of disease due to chronic conditions (OECD and European Observatory on Health Systems and Policies, 2017), have prompted Portuguese authorities to prioritize long-term care; typically characterized as the system of activities undertaken by unpaid caregivers and/or professionals to ensure that a person not fully capable of self-care can maintain the highest possible quality of life (World Health Organization, 2015).

In Portugal, the most prominent measure taken to date to invest in long-term care is the establishment in 2006 of a national actor: Rede Nacional de Cuidados Continuados Integrados (RNCCI) [National Network for Long-Term Integrated Care] (Lopes et al., 2018). The RNCCI was formed through a partnership of the Ministry of Health and the Ministry of Labour, Solidarity and Social Security and provides health, rehabilitation and nursing care services for residents unable to care for themselves (Segurança Social, 2019). The RNCCI works in parallel with the Rede de Serviços e Equipamentos Sociais (RSES) [Network of Social Services], affiliated to the Ministry of Labour, Solidarity and Social Security, as a social services provider to older people with low resources or facing social exclusion (Lopes, 2016; expert communication). The mandate and organizational arrangements of the RNCCI and other long-term care actors are described in detail in this article (see section 3.3).

Other efforts for integrating health and social care in Portugal have followed these structural changes, though with a more limited scope and reach (Santana et al., 2014). Following the model of partnership between the Ministry of Health and Ministry of Labour, Solidarity and Social Security underpinning the RNCCI, efforts have been made to build upon the RNCCI's mandate. For example, the Action Plan for the Restructuring and Development of Mental Health Systems and the Long-Term Integrated Mental Care Structure, rolled out in 2007 and 2010 respectively, aimed to create multidisciplinary structures of integrated long-term mental health care. In addition, an initiative for creating a joint system of supportive technical aids and financing was rolled out in 2009 (Santana et al., 2014).

While the establishment of these structures has been a step in the right direction, long-term care services delivery in Portugal face several challenges. Previous work highlights how the persistent fragmentation of governance and financing arrangements remain the main obstacles to advance the integration of services in Portugal (Lopes et al., 2018; Lopes, 2016; Santana et al., 2014). There are persistently high rates of institutionalisation rather than home care, regional inequalities, overlapping mechanisms for needs assessment, limited accessibility and equity, long waiting lists and a high proportion of hospital readmissions without ambulatory contact. In addition, there is very limited interoperability between information systems and a lack of a clear contractual model that

unifies health and social services provision (Lopes et al., 2018; Santana et al., 2014; Barros and de Almeida Simões, 2007; CNRSSM, 2007).

1.2. Purpose and rationale

This study set out to develop an actionable overview on the state of long-term care in Portugal from a services delivery perspective. As countries face accelerated population ageing and increasing prevalence of chronic conditions, the development and use of sector-spanning frameworks is of increasing importance. Recent European and global policies for advancing healthy ageing and systems strengthening have called attention to this, with emphasis on integrated care and people-centred systems as a precursor to the integrated delivery of health and social services (World Health Organization, 2017; World Health Organization, 2015; WHO Regional Office for Europe, 2012).

By applying systems thinking, this paper aims to describe the underlying characteristics and dynamics of Portugal's long-term care services. By adopting a services delivery perspective, it creates a more robust depiction of long-term care that attempts to tackle what has been called the "input-blackbox-output" paradigm (de Savigny and Taghreed, 2009) and delve into the services delivery function. In doing so, the deliberate decisions that can be made regarding the selection, design, organization, management and improvement of health and social services are explored (WHO Regional Office for Europe, 2016a) together with the underlying system structures that direct and steer these processes. This paper and its approach aim ultimately to identify relevant policy-level options for advancing the integrated delivery of long-term care.

2. METHODS

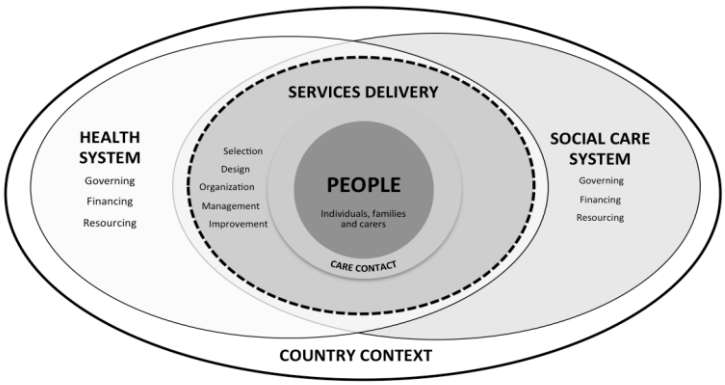
2.1. Analytical framework

The framework underpinning this paper has been shaped by the principles of systems thinking (de Savigny and Taghreed, 2009), people-centeredness (WHO Regional Office for Europe, 2016a) and integrated care (World Health Organization, 2016; WHO Regional Office for Europe, 2016). Its areas of focus draw from the current WHO health policy for integrated health services delivery in Europe (WHO Regional Office for Europe, 2016), setting out an approach to view services delivery as the interactions between individuals and populations, services delivery and enabling system structures. The framework was developed and endorsed by policy-makers, making it highly attuned to health systems, policy priorities and the information needs of decision-makers in Europe (WHO Regional Office for Europe, 2019).

The approach taken is novel in putting services delivery at the intersection of the health and social sector on one side and individuals, their families and caregivers on the other, Fig. 1. While it is the services delivery sphere that is the main area of focus for this paper (dashed circle), the health and well-being of the population is explored at the outset as the basis of ensuring a needs-based orientation to the model of care. Care contact is used to describe the intersection between people and services delivery, capturing aspects related to coverage of services and entitlements.

The corresponding health and social system and their respective governance, financing and resourcing arrangements are also explored. While the broader socio-political context of the country is acknowledged, these factors are outside the scope of this paper.

FIGURE 1 - PEOPLE-CENTRED INTEGRATED DELIVERY OF LONG-TERM CARE VISUALIZED



Source: adapted from World Health Organization, 2016; WHO Regional Office for Europe, 2016.

2.2. Study instrument

A topic-guide as a taxonomy of key features for exploring long-term care from a services delivery perspective was developed to scope this work, Table 1. It served to inform all stages of data collection including the search strategy and semi-structured key informant interviews. It has also been applied to structure the analysis of findings.

The areas for investigation draw from an ongoing initiative in the WHO European Region to identify priority areas for the integrated delivery of long-term care. This work has been shaped by a series of literature reviews, country studies to explore long-term care in practice, and in 2018, a workshop with country delegates and technical experts to discuss preliminary results and validate the areas of focus (WHO Regional Office for Europe, 2019).

2.3. Souces of data

This paper applies mixed-methods and sources of information. It has relied on qualitative data, literature searches, observational facility visits, semi-structured interviews and roundtable discussions with key informants. This design was adopted in order to consolidate a comprehensive view of long-term care in Portugal. The specific sources and process for data collection are described as follows.

Database data

Data for existing, standardized indicators was extracted from international databases, namely Eurostat (European Commission, 2019), the Institute for Health Metrics and Evaluation (IHME, 2019) and the Organisation for Economic and Co-operation and Development (OECD) (OECD, 2019), as well as the Portuguese National Institute of Statistics (INE, 2019). This data has primarily informed an analysis of the current health context in the scope of depicting the health and well-being of older people in Portugal.

TABLE 1 - TAXONOMY OF RELEVANT FEATURES FOR LONG-TERM CARE

Domains	Sub-domains	Relevant features
People	Health and well-being of older people	Demographics
		Health status, risk factors and determinants
	Care contact	Coverage of long-term care services (entitlements)
		Points of entry to long-term care services (pathways)
Services delivery	Selection of health and social services for older people	Health services (ambulatory care, mental health services, rehabilitation, palliative care)
		Social services (social work, support for personal care, household tasks, driving and transportation, social integration, fitness/strength training)
	Organization of providers	Types of long-term care settings
		Types of long-term care providers
		Role of unpaid caregivers
	Services delivery management	Local planning and resource management for long-term care services
	Improving performance and learning	Clinical governance
		Continuous professional development
		Performance monitoring
		External quality assurance
System structures	Governing long-term care	Accountability arrangements
	Financing long-term care	Spending on long-term care
		Payment of providers
	Workforce	Competencies of professionals delivering long-term care
		Joint health and social continuous professional development
	Information system	Interoperability of information systems
		Data capture on health and well-being of individuals
		Patient platforms

Source: adapted from WHO Regional Office for Europe, 2016.

Scientific and grey literature

The literature search targeted scientific and grey literature on Portugal's long-term care services using the topics listed in Table 1 as keywords. Searches for grey literature included the WHO database WHOLIS for Portugal-specific reporting like the Health Systems in Transition Series (Simões et al., 2017). Other grey literature included reporting from organizations like the European Commission and OECD. Searches for scientific literature were conducted using MEDLINE (PubMed) and Google Scholar on the topic of health services and social care services in Portugal. Literature was reviewed in both English and Portuguese.

Field evidence

A five-day country visit took place in 2018. The country visit included facility site visits and semi-structured group interviews with care professionals, coordinators and managers. Group interviews included a hospital discharge management team, a local coordination team, a regional coordination team, care professionals at a private and a non-profit institution residential institution with convalescence, medium and long-stay units, as well as a nursing home care team.

Roundtable discussions

Open discussion fora with academic experts, policy-makers and representatives of the main care providers in Portugal were also organized and conducted during the country visit. Two discussions were held – one at the outset and a second at the closing of the visit. Participants included representatives of the Ministry of Health, the Ministry of Labour, Solidarity and Social Security, the RNCCI, the National Confederation of Solidarity Institutions (provider umbrella association), the National Network of Palliative Care, the union of the independent charitable Misericórdias (non-profit provider umbrella organization), Integrated Mental Health Care, academics e.g. University of Porto, and regional and local care coordination teams. Over 20 experts provided their inputs and insights. The second discussion served as a preliminary validation of the study's findings.

2.4. Limitations

The available epidemiological data and demographic indicators for Portugal highlight significant gender-based differences in needs and in provision of care. Paid and unpaid caregivers are overwhelmingly women (INE, 2019a). The study's design however, was not specifically geared to address these aspects. Moreover, some aspects of services delivery such as clinical pathways, care plans, case management, quality improvements, medicines and assistive devices (wheelchairs, glasses, hearing aids); medicine reconciliation and services for self-management are less developed due to a lack of information. These topics require tailored methods in order to be fully captured in future work.

3. FINDINGS

3.1. Health and well-being of older people

Over the last decade the health status of the Portuguese population has improved significantly (OECD and European Observatory on Health Systems and Policies, 2017). Life expectancy at birth has increased by over four years between 2000 and 2015, reaching 84.2 years for women and 78.5 years for men in 2017 (IHME, 2019a). By 2017, over 2.2 million people (22% of the Portuguese population) were aged 65 or above (The World Bank, 2019) and of these, almost 1.3 million are women (58%). The proportion of people 65 or above is expected to increase to 35% by 2050 (The World Bank, 2019).

Across the country, there are marked differences in the geographic distribution of Portugal's older population. Most older residents primarily live in coastal, more densely populated areas, where they nonetheless represent a smaller proportion of the population. According to regional statistics, the population in northern Portugal has one of the highest median ages in Europe, sharing characteristics with other island and coastal areas that are found to be popular retirement destinations (Eurostat, 2019). In contrast, while a smaller share of older people live in the interior, more rural regions, in these regions older people represent between 30% and 45% of the population (IHME, 2019a). The average household size is currently 2.6 individuals, a slight decrease from 2.8 in the year 2001 (Pordata, 2019). Portugal's total dependency ratio is 53.4, calculated as the population younger than 15 or 65 and older per 100 people of working age. Considering only the older people, this ratio is 31.8, the fifth highest in the world (CIA, 2019).

In 2017, the top five leading causes of death for older people (70 years or older) in Portugal included stroke, ischemic heart disease, Alzheimer's disease, lower respiratory infection and chronic obstructive pulmonary disease (IHME, 2019a). For both older men and women, Alzheimer's disease and lower respiratory infection are the fastest rising causes of death (IHME, 2019a). Furthermore, the top causes of disability-adjusted life years are currently cardiovascular diseases, neoplasms, neurological disorders, diabetes, and musculoskeletal disorders (IHME, 2019a). Leading risk factors associated with years lived with disease and disability are metabolic and behavioural, specifically high fasting plasma glucose, high body-mass index, high blood pressure, smoking and alcohol use (IHME, 2019a).

Despite longer life expectancy, women are at a disadvantage concerning estimated healthy life expectancy in older age. According to 2011 data, women are expected to live 62.2 years in healthy life compared to 63.9 years for men (OECD and European Observatory on Health Systems and Policies, 2017). Furthermore, healthy life expectancy at 65 is 5.6 years for women and 6.9 years for

men (OECD and European Observatory on Health Systems and Policies, 2017). Women also report greater limitations in activities of daily living due to ill-health: 22.7% of older women report severe limitations and 46.6% report some limitations, whereas 15.9% of men report severe limitations and 39.9% report some limitations. Currently, it is estimated that almost 900,000 of Portuguese residents of all ages live with health-related living limitations (OECD and European Observatory on Health Systems and Policies, 2017).

There are marked inequalities in the determinants of health that affect the well-being of older people. While the poverty rate for individuals aged 65 to 74 is lower than the national average, it increases by ten percentage points for people 75 or older, especially among those living alone (Rodrigues and Andrade, 2014). Women, in addition to being more likely to live alone, are at higher risk of being poor than men: the percentage of people at risk of poverty at age 65 years or older is 20% for women compared to 16% for men (UNECE, 2017).

3.2. Care contact

Coverage of long-term care services

As of 2017, about 40,400 people 65 or older were receiving long-term care services in Portugal equivalent to 1.8% of the total older population. Out of these, about 23,400 (58%) were women (OECD Health Statistics, 2019). About 13,100 were receiving care at home (32%). Rates of coverage and provision of services at home are both significantly lower than those of other OECD countries (OECD Health Statistics, 2019).

Despite continuous growth in the RNCCI inpatient capacity, the number of available beds is only 57% of those that had been projected to be in place for 2016: 8,112 out of the over 14,300 forecasted. Both the number of individuals served and coverage rates have increased but there are only 15.6 treated individuals for every 1,000 of those 65 and older (European Commission, 2016). Nursing care at home through integrated care teams (equipas de cuidados continuados integrados), has grown from 72 to 279 teams between 2008 and 2016, yet only 3.2 per 1,000 of those 65 and older were covered as of 2016 (ACSS, 2017; expert communication).

The RSES home-help services surpassed 100,000 users in 2014 but they are still reaching less than 5% of those 65 and older. This is significantly below northern European countries, where coverage rates are consistently greater than 15% (Bettio and Verashchagina, 2010). Day social centres have grown by over 25% during the past ten years, reaching over 65,000 places in 2015, but the occupancy rate has declined to 65% in 2015 (Gabinete de Estratégia e Planeamento-MLSSS, 2015).

Institutional care for older people provided at residential homes, home-help services and day social centres are the main services available for older people, accounting for over 60% of new instances of service provision by the RSES in 2017. While service provision has grown steadily during the past decade, the coverage was 12.7% in 2017 (Gabinete de Estratégia e Planeamento-MLSSS, 2017).

Points of entry to long-term care services

Entitlements to RNCCI and RSES services are assessed separately. RNCCI care is provided following a referral either from a multidisciplinary discharge management team after an acute episode or from a general practitioner. The referring party ascertains an individual's needs and makes recommendations for the type of services, duration, intensity and setting. Subsequently, the local coordination teams, composed of health care providers, social workers and representatives of the Ministry of Labour, Solidarity and Social Security review and confirm referrals (Lopes, 2016). The assessment performed by the RNCCI is based on the National Functional Table that has the WHO International Classification of Functioning, Disability and Health as its reference. Eligibility is determined based on care needs and dependency, irrespective of the person's age, in accordance with law N. 101/2006. However, there is no proactive needs assessment linked to the right to care. A criterion to access RNCCI nursing care at home is "whether users are able to be cared for at home". Although there is no an explicit rule linking this to the presence of informal carers (experts communication), this criterion benefits mostly older women living alone, experiencing housing deprivation or with greater care needs.

In the case of the RSES needs assessment is applied on discretionary basis and there is no standardized tool. Instead, dependency is ascertained using the Bio-psychosocial Assessment instrument (Abreu Nogueira et al., 2010). Access to RSES services can be requested directly by the older person or his/her relatives. It is, nevertheless, regulated by the availability of service providers,

patronage and ability to pay out-of-pocket contributions (Lopes, 2016). Patient choice is limited to the selection of services among those available in a given geographic area. Referrals to other geographic areas or to the private sector are possible if the maximum allowed waiting time has been reached (Simões et al., 2017). Local branches of the Ministry of Labour, Solidarity and Social Security, discharge management teams and municipalities provide guidance to users that request these types of services.

3.3. Services delivery

Range of health and social services

Health services specifically relevant to older populations include influenza vaccination with no prescription (OECD and European Observatory on Health Systems and Policies, 2017) and physiotherapy and renal dialysis services that are generally provided by private institutions subsidised via public funding (Simões et al., 2017). Starting in 2008, free access to dental care is also available via direct reimbursement to older people receiving social benefits (OECD and European Observatory on Health Systems and Policies, 2017).

The RNCCI provides rehabilitation and intermediate care services for patients recovering from an acute episode or living with chronic diseases. Services include daily health care, physiotherapy, occupational therapy, prescription and administration of medications (Simões et al., 2017). Home help, such as meals on wheels and personal hygiene are provided by the RSES's SADs (Gabinete de Estratégia e Planeamento-MLSSS, 2017).

Regarding mental health, ambulatory services are chiefly provided in primary care settings. The National Health System, in conjunction with the social security and employment departments, provide social rehabilitation and reintegration, while psychiatric hospitals provide residential care for the homeless and those with no family (Simões, 2017).

Palliative care is provided under a specific national programme established by the Ministry of Health in 2017. The system aims to provide a wide range of service options both in hospitals and at home. The programme is new and no information on coverage is yet available (Simões et al., 2017).

Social services are provided both under the RNCCI and the RSES. However, no protocol for joint provision is in place. RNCCI social services are delivered at inpatient settings and at home through independent charitable organizations such as the Misericórdias. These services include personal hygiene, nutrition, laundry services and accompaniment to medical visits (Simões et al., 2017). RSES services include personal hygiene, nutrition, laundry services, home repairs, tele-assistance and accompaniment to medical visits and legal appointments (Gabinete de Estratégia e Planeamento-MLSSS, 2017).

The RSES provides a dependency allowance in cash to pensioners based on a medical assessment. Its value, calculated as a percentage of the value of the social pension, varies according to the pension scheme[2] and the severity of the dependency, i.e. moderate or severe.

Organization of providers

Long-term care in Portugal follows a model of public-private care mix with a limited role of the State in the direct service provision. The government ensures public subsidies to non-profit and for-profit providers that jointly account for most of the long-term care delivery capacity. The reliance on non-profit providers has reflected in a vertiginous development of the sector from approximately 1,500 providers in the 1980s to over 5,000 in 2015 (Lopes, 2016). Long-term care services in Portugal are provided by the RNCCI and the RSES, Fig. 2 (Lopes et al., 2018; Gabinete de Estratégia e Planeamento-MLSSS, 2017).

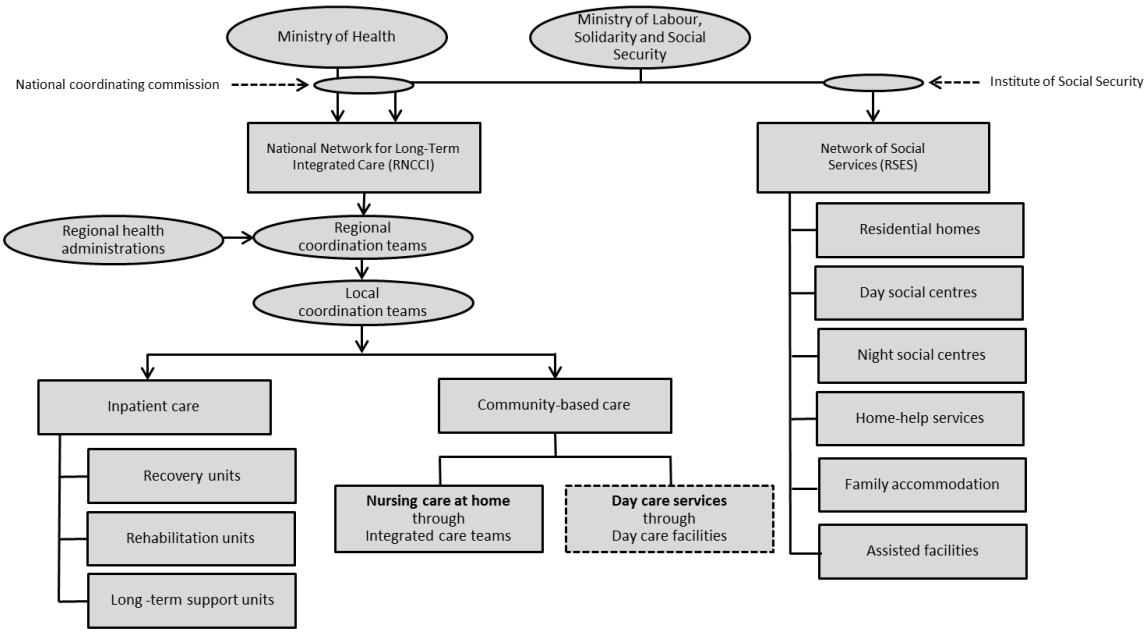
Primary health care is the cornerstone of the health system, provided by the family health units and mobile units that reach out to isolated communities. While residents are required to register with a general practitioner, almost 1.5 million Portuguese residents (14.5% of the population) do not have a regular family doctor assigned (European Commission, 2016). Primary health care providers act as

[2] Pensioners who paid social contributions above a certain number of years qualify for the general old-age contributory pension scheme while those who do not met the criteria or had not contributed to the system receive one of the several means-tested old-age non-contributory pensions. If beneficiaries reside in a public subsidized residential home, they can only receive the amount corresponding to the moderate level.

gatekeepers, referring patients to specialist care. A prescription issued in primary health care is mandatory for medications covered by the National Health System (European Commission, 2016).

In 2006, the RNCCI was jointly established by the Ministry of Health and the Ministry of Labour, Solidarity and Social Security to "provide adequate care, health and social support to all persons who, regardless of age, are in a situation of dependency" with a special emphasis on integrated care, including convalescence care, recovering, and reintegration of chronically ill people (Segurança Social, 2019). The RNCCI provides inpatient and community-based care. Inpatient care, intended for patients requiring care that cannot be provided at home, is delivered through: (i) recovery units; (ii) rehabilitation units; and (iii) long-term support units. The specific unit to be accessed is determined according to a length of stay up to 30 days (i), 90 days (ii) or more than 90 days (iii). Long-term support units also provide respite care. Until 2015, the RNCCI provided late stage and end-of-life care to patients with terminal illness through palliative care units, now part of the national network of palliative care (Lopes et al., 2018).

FIGURE 2 - ORGANIZATIONAL OVERVIEW OF ACTORS INVOLVED IN LONG-TERM CARE IN PORTUGAL



Source: Adapted from Lopes et al., 2018, Carta Social, Rede de Serviços e Equipamentos 2016, authors' own elaboration.

Notes: Oval shapes denote governing or coordinating entities, rectangular shapes denote types of services or settings of services delivery dashed border denotes services not yet implemented. Arrows depict the alignment and hierarchy of accountability arrangements in terms of the assignment of mandate though do not capture the details of resourcing, reporting and feedback. The corresponding names in Portuguese are as follows: Ministry of Health: Ministério da Saúde; Ministry of Labour, Solidarity and Social Security: Ministério do Trabalho, Solidariedade e Segurança Social; national coordinating commission: comissão nacional de coordenação; institute of social security: instituto da segurança social; regional health administrations: administraçoes regionais de saúde; regional coordination teams: equipas de coordenação regional; local coordination teams: equipas de coordenação local; National Network for Long-Term Integrated Care: Rede Nacional de Cuidados Continuados Integrados; Network of Social Services: Rede de Serviços e Equipamentos Sociais; recovery units: unidades de convalescença; rehabilitation units: unidades de média duração e rehabilitação; long-term support units: unidades de longa duração e manutenção; integrated care teams: equipas de cuidados continuados integrados; day care facilities: unidade de dia e de promoção da autonomia; residential homes: estruturas residenciais para pessoas idosas; day social centres: centros de dia ; night social centres: centros de noite; home-help services: serviços de apoio domiciliário, family accommodation: colhimento Familiar; assisted facilities: instalações assistidas.

RNCCI community-based care is intended for individuals with temporary or prolonged loss of functionality who are frail, have limited mobility or severe functional limitations or who suffer from severe, advanced or terminal disease but who can be safely treated at home (Lopes, 2016). Community-based care is organized as nursing care at home and as day care services. The former have not yet been implemented. Nursing care at home is provided by integrated care teams; a

multidisciplinary team composed of physicians, nurses, therapists and social workers. Services are targeted to individuals that require medical care at least once a day or at least 3 days a week for a duration longer than 1.5 hours each time, who have potential for rehabilitation or whose unpaid caregivers need support or training for providing care at home. Once implemented, day care services will provide services in day care facilities for those who can remain living at home but who cannot get the required health and social care during the day.

The RSES provides social services to vulnerable groups facing poverty, social exclusion or difficulties combining work and family life (Gabinete de Estratégia e Planeamento-MLSSS, 2017). Created several decades before the RNCCI, the RSES focuses on addressing needs related to difficulties with instrumental and general activities of daily living (Lopes, 2016; expert communication). RSES services are delivered through: (i) residential homes; (ii) day social centres; (iii) night social centres; (iii) home-help services; (iv) family accommodation; and (v) assisted facilities. The former services are exceedingly rare, reflecting an underinvestment in more innovative care arrangements (expert communication; Lopes, 2016). Private investments in developing sheltered accommodation and assisted living facilities targeting older, dependent individuals from high-income groups are also rare and have generally been met with resistance from older users (Lopes. 2016). Additionally, there is need for investing in assisting devices for self-management and self-care as the use of tele-assistance and telemedicine is extremely limited (WHO Regional Office for Europe, 2016a).

Unpaid caregivers

As with other southern European countries, Portugal relies heavily on the support lent by families and other unpaid caregivers. Although Portugal has established mechanisms to ensure a basket of long-term care services over the past few decades, care for older people continues to be understood as a responsibility of families (Lopes, 2016). Also, families bear the duty to care or to financially contribute to their older relatives' care by law (expert communication).

According to the 2014 National Health Survey, 1.1 million Portuguese people over the age of 15 provided unpaid care to another person. Of these, approximately about 61% were women in their capacity as daughters, mothers, or wives (INE, 2019a). Additionally, 42.6% of unpaid caregivers provided care for 10 hours or more per week (INE and INSA, 2016).

A recent study conducted by the Portuguese Association for Consumer Protection found that unpaid caregivers were disproportionately affected by anxiety and depression. Without their help, the study reports, over 80% of the older people would be at risk of institutionalisation or would have serious unmet needs (Simões et al., 2017).

Caregivers are not entitled to cash benefits or any other financial incentives besides 15-days of unpaid leave from work annually. A dependency allowance paid in cash is assigned to older people who have been assessed as being bedridden or dependent on the help of others and can be used to compensate unpaid caregivers. Other available resources include respite care provided via the long-term support units, as well as training and counselling services (Serviço Nacional de Saúde, 2019). Support outside the public sector is limited to the network of unpaid caregivers of Portugal, a non-profit organization embedded within the European network of unpaid caregivers called Eurocarers. This network fosters the development of new technologies with the support of municipalities, universities and research centres with the objective of facilitating social inclusion and meeting the needs of unpaid caregivers (Simões et al., 2017).

Management of service delivery

The RNCCI is managed at the local level by local coordination teams which report to regional coordination teams that are under the oversight of the regional health administrations. Besides confirming referrals for users to access services of the RNCCI, the local coordination teams also oversee services delivery within their catchment area. The regional coordination teams oversee larger geographical areas and supervise the accreditation of providers as well as quality assurance (inspection) by way of coordinating the supply of services within their geographical scope. Management of services therefore includes several elements of a bottom-up approach, especially regarding the assessment of needs in a given geographical area. In order to steer the allocation of funds among the different regional health services and to avert geographical inequalities, the RNCCI has established specific ratios and services standards, namely by defining the capacity required in a given service typology for a given number of population (expert communication).

RSES services are managed by the Institute of Social Security through its district centres and the quasi-public Misericórdia of Lisbon[3] (Santa Casa da Misericórdia de Lisboa). It appears that despite services provision is usually contracted with non-profit providers, the Institute of Social Security has limited ability to influence the referral of users to providers of the RSES as there is no standard needs assessment or single-entry point to the system. Both service delivery and the assessment of needs has in effect been delegated to the non-profit providers within the RSES (Lopes, 2016). The exception to this is the 10% of the capacity of each subsidized provider that can be used at discretion of the Institute of Social Security for urgent cases or most deprived users.

Both private for-profit and non-profit providers may increase their capacity prior to receiving ministerial authorization. Privately provided care, i.e. care entirely paid out-of-pocket, is not managed by the RNCCI but licensed by a different body of the Ministry of Health. Providers must ensure that capacity contracted to the RNCCI including common areas and services, e.g. laundry, will not be affected by requested expanded capacity, e.g. by reducing staff allocated to the RNCCI.

Overall, most providers are small. However, Misericórdias have a sizeable importance at the local level as they are the main providers of long-term care services in most municipalities of Portugal. Because of the contracting out nature of long-term care, providers, particularly non-profit, are important stakeholders. They are organized under an umbrella organization that centralizes negotiations with the Ministry of Health and the Ministry of Labour, Solidarity and Social Security regarding the subsidies paid for provision of long-term care services outside the RNCCI.

From the perspective of providers, the subsidies are low, especially those of the RSES. Many non-profit providers rely on charitable donations or offer a mix of subsidized and private beds within the same facility, to cover loses (expert communication). Similarly, arrears of users to providers are not uncommon (expert communication).

Misericórdias and non-profit providers have reported initiatives regarding applying new models of care or delivering new services, many seeking to fill the gaps in the public provision, e.g. training of informal carers.

Improving performance and learning

Quality of care of the RNCCI is monitored via the collection of data from all entities providing services. This includes data on referrals, admissions, transitions, waiting times, user satisfaction and clinical indicators such as pressure ulcers, falls, unplanned weight loss, discharges with attained objectives and physical autonomy (OECD, 2013). Additionally, local and regional coordination teams monitor facility licensing based on minimum standards established by contracts with the RNCCI, including staff ratios for residential facilities (OECD, 2013).

Quality assurance within the RSES is more limited in scope. The Institute of Social Security carries out the licensing on behalf of the RSES. Providers receiving public financing to deliver services must comply with a set of regulations regarding their operations such as operating hours and satisfying minimum standards established by the Ministry of Labour, Solidarity and Social Security. This system of licensing is relatively new and some reviews have questioned its effectiveness in triggering quality improvements (Lopes, 2016). Since the enter into force of the law N. 64/2007, these minimum standards are an essential condition for the awarding of public financing and they comprise 3 levels of quality: minimum, voluntary and good practice.

No further quality monitoring measures have been reported. The annual report of the RSES “Social Charter” provides an overall summary of system coverage and services provided but does not include any appraisal of quality of care or user satisfaction.

Clinical guidelines are mandatory and widely implemented. They are developed under the joint responsibility of the Ministry of Health and the Portuguese Medical Association, which encompasses all medical specialties. In general, clinical guideline compliance is higher in the hospital setting (58%) compared to primary health care (32%) (WHO Regional Office for Europe, 2016a). There are also recommendations regarding procedures and both the RNCCI and the RSES have developed manuals to foster standardization of practices, namely in the area of individualized care planning and medicine management (OECD, 2013). Clinical guidelines have also been adopted in order to foster sensible drug prescription (European Commission, 2016).

[3] Despite being named “Misericórdia”, the Santa Casa da Misericórdia de Lisboa is in effect a public organization that serves as provider of care in the Lisbon area.

Several measures for decreasing waiting times have been implemented, including maximum waiting times for different services and referrals to other geographic areas or the private sector when this maximum waiting time has been reached (Simões et al., 2017). Waiting times for hospital surgeries are monitored via a national integrated electronic system (European Commission, 2016).

The introduction of the individual electronic card, electronic medication prescribing and electronic patient records have allowed closer monitoring of service utilization, prescriptions and goods consumption. Following these initiatives, a decrease in the use of unnecessary pharmaceutical, specialist and hospital emergency care has been registered (European Commission, 2016).

3.4 System enablers

Governance

The provision of long-term care services is managed at the central level by the Ministry of Health and Ministry of Labour, Solidarity and Social Security, regional level by the health regional administrations and locally by the networks of health centres. Services are rendered based on a public-private care mix where the central government pays subsidies to for-profit and non-profit entities that are chiefly responsible for providing services. The RNCCI is governed by the National Coordination Commission, a joint coordinating body led by a representative of the Ministry of Health and composed of an equal number of representatives from the Ministry of Health and the Ministry of Labour, Solidarity and Social Security: three from each Ministry, which in the case of the Ministry of Health includes the national coordinator. This coordination body is responsible for the strategic development and management for the full scope of activities concerning the RNCCI, from the definition of quality criteria and technical requirements for each type of service, to the development of priorities for increasing supply of services. Governance of the RSES falls entirely within the remits of the Ministry of Labour, Solidarity and Social Security.

Financing

Public expenditure on long-term care in Portugal is about 0.5% of gross domestic product. Even assuming under-reporting of expenditure given the fragmented nature of financing and provision across ministries, public expenditure on long-term care is still significantly lower than the OECD average of 1.4% (OECD, 2017). Public expenditure on long-term care is financed via general taxation, regardless of whether it is provided by the RNCCI or the RSES. In addition, a percentage of the revenue from lottery games is earmarked to the RNCCI (Costa-Font et al., 2012). Most public funds are channelled through the financing of in-kind benefits, with cash benefits playing a limited and diminishing role (Lopes, 2016). Despite budgetary cuts implemented in the aftermath of the financial crisis in 2008, public expenditure on long-term care continued to grow, albeit from a very low basis (Lopes, 2016). The public sector covers 47% of expenses related to medical goods and devices, the rest being paid generally out-of-pocket (WHO Regional Office for Europe, 2016a).

From the perspective of the beneficiaries, long-term care in Portugal is usually deemed as expensive and not affordable for a significant share of the population. In 2011, an assessment on access conducted by the Health Regulatory Entity estimated that, on average, beneficiaries paid over €200 and €360 out-of-pocket per month for services in rehabilitation units and in long-term support units, respectively (Entidade Reguladora da Saúde, 2013). In 2015, the monthly average old-age pension was about €357 (own calculation based on ISS data accessed via www.ine.pt on 14 February 2018) and non-contributory old-age pension about €205.

The household income calculation may also constitute a barrier to access when older people are co-residing with their children (expert communication), a common phenomenon particularly among those with poorer health condition (Barbosa and Matos, 2014).

Workforce rendering long-term care services

There are marked differences in the workforce currently operating in the long-term care system. Professionals employed by the RNCCI work in multidisciplinary environments and undergo continuous training programmes organized by the national network for the development of their competencies. These include, for example, trainings on palliative care, bioethics, quality improvement and managing chronic pain in the context of long-term care, Box 1. The RSES workforce is primarily composed of care workers with little or no qualifications and very limited access to continuous professional improvement and training. These disparities often render cooperation difficult and limit opportunities for joint-working and planning. In order to address this, local

initiatives for joint RNCCI and RSES training for teams providing home-based care are already taking shape (expert communication).

The average workload for an integrated care team varies greatly between regions, from 35 treatment places per team in Lisbon, an average of 13 places per team in the Centre region to 15 places per team in Alentejo. This also reflects the differences in the nursing care at home in each region. For example, the average travel distance in a densely populated region as Lisbon represents only a fraction of the distance covered by integrated care teams in a low population density area such as the Centre region and Alentejo. As transfer time increases, the integrated care teams perform less visits (expert communication).

The number of health professionals rendering long-term care services has rapidly increased during this decade. The government promotes vocational training opportunities for home- and residential-based services. These trainings are usually financed by the national health system or by the Institute of Social Security (OECD Health Statistics, 2019).

E-health platform

The Portuguese health system relies on several IT platforms for registering, collecting and analysing care processes. The most prominent and specialised of them is the RNCCI's GestCare CCI online data management system, which allows for timely information sharing between different providers. The GestCare CCI platform supports detailed recording of the RNCCI users' characteristics, health status and care needs in a complex modular structure. This structure includes information relevant to both social, such as social and financial situation, family and household characteristics, as well as health care support, such as medical history, specific assessment of cognitive, functional and palliative health status and identification of main health risks (expert communication).

Additionally, electronic medical records and unique patient identifiers are housed in the health data platform. This platform processes electronic patient records data on health-related information, prescriptions and appointments and data related to long-term care. The health data platform has portals for patients, health care providers and agencies providing services (Simões et al., 2017).

BOX 1 - CONTINUOUS TRAINING PROGRAMMES WITHIN THE NATIONAL NETWORK OF INTEGRATED CARE

- Skills and strategies in the development of the national network of integrated care
- Work methodologies in long-term care
- Organization and operation of the national network of integrated care units/teams
- Bioethics
- Training professionals in inpatient reference units
- Implementation of the Status of Resources Law in national network of integrated care
- Continuous improvement in long-term care
- Quality evaluation and auditing
- Dementia in long-term care
- Assessment and intervention in situations of elderly violence and mistreatment
- Palliative care: basic course of palliative care, intervention in grief and loss
- Respect for human dignity in national network of integrated care
- Chronic pain
- Geriatrics and gerontology
- Clinical training in geriatric syndromes, treatment of wounds/pressure ulcers, compression therapy and non-invasive ventilation
- Clinical risk management in long-term care
- Prevention and control of infection in long-term care
- Individual intervention plan
- Nutritional intervention in long-term care
- Implementation of international classification of functionality
- Diabetes in long-term care

Source: European Commission, 2016.

While the solid IT infrastructure in place is conducive to efficiency and integration, linkage of individual records and interoperability among the different platforms remains a challenge. Plans to

ensure interoperability of data from the health and social sectors are being currently discussed and under development (expert communication). Interoperability of platforms would facilitate the use of this data for conducting an array of research projects such as measuring and monitoring usage trends, outcome-related performance and patient values and preference.

4. Discussion

Portugal has enacted several measures to foster long-term care services provision for older people (Lopes et al., 2018; OECD and European Observatory on Health Systems and Policies, 2017). The establishment of the RNCCI is a testimony of such efforts to integrate long-term care services delivery. The mix of providers is an asset and, potentially, a driver for integration. Particularly the large non-profit sector, well-established as the primary provider of care, has a long history of seeking integration among the different stakeholders that are active in the sector (expert communication).

At the local level there appears to be a fair degree of collaboration and coordination, spurred by the initiative of personnel in the local and regional coordination teams, social security centres, municipalities and providers. These informal linkages have the potential to achieve seamless transitions and satisfaction among users despite the absence of pathways between the RNCCI and the RSES. These arrangements, however, are not systematic or fully recognized at the national level.

While recognizing the long-standing endeavours to integrate services, equity, quality, efficiency and sustainability concerns remain due to service delivery and system shortcomings. In the approach of the taxonomy applied, the following entry points for policy-level actions are noted based on the study's initial ambition to generate intelligence for setting priorities to continue to strengthen the integrated delivery of health and social care.

Revisit the model of care for quality services provided at home, designed according to a well-developed assessment of users' needs

In Portugal, there is predominance of institutionalisation over home care (Lopes et al., 2018). In order to keep older people at home as long as possible and to reduce high institutionalization rates (Lopes et al., 2018), the model of care requires a profound reorientation. Feasible measures in the current context include rolling out community-based care services in the day care facilities that are to be introduced, which can provide care to people who are autonomous in movements. Recognizing the heavy reliance on unpaid caregivers at present, policies should recognize their engagement, facilitate training (upskilling), promote policies to reconcile employment and care, provide cash benefits or pension entitlements such as recognizing the time spent caring full-time and consider co-residency when calculating income to access social assistance (Spasova et al., 2018). Already in early 2019 this matter received political attention with the Council of Ministries approving a motion to "establish a set of measures to support unpaid caregivers, regulating their rights and duties and of the people under their care" (Comunicados de Conselho de Ministros, 2019). The motion, set to be put forward to the Parliament, includes provisions to support full-time unpaid caregivers by measures such as cash benefits. While no further details on the nature of this set of measures were provided and the scope of the benefits seems limited (Maia, 2019), this motion may become a stepping-stone for addressing the needs of unpaid caregivers.

The RNCCI and RSES should adopt a people-centred approach to better and decisively integrate services offered by each. The strong IT infrastructure in place could be a starting point for enacting joint needs assessment and for designing care pathways that allow transition between RNCCI and RSES while preventing duplication of services, avoid gaming and, most importantly, ensure minimum standards of quality across the spectrum of services. Under the current RNCCI model, for instance, both long-term support units and the integrated care teams provide overlapping services to individuals at different levels of dependency. These services also share mandates with home-help services available through the RSES. The resulting dual long-term care system increases disparities in access and coverage: RNCCI services are mostly public and provided by highly qualified personnel whereas RSES services are dependent on an individual's ability to pay out-of-pocket contributions and are delivered by non-profit providers with mostly under-qualified staff.

Currently, discharge management teams or general practitioners are the gate-keeper to access services provided by the RNCCI (Lopes, 2016). Under the RSES, referrals do not follow a standard procedure. Instead, the local social security centres, discharge management teams, and

municipalities assist users in contacting providers but without ensuring access (Lopes, 2016). A joint RNCCI and RSES procedure that relies and is built upon the available IT system can further spur integration of services. Such an approach can foster re-qualification of available services to avoid overlaps and to better respond to the changing profile of users, for example, by ensuring that residential homes provide services that complement those delivered by the long-term support units. This is particularly relevant to address the increasing prevalence of dementia.

RNCCI and RSES were built upon already-existing structures, such as the century-long tradition of non-profit social service providers founded with a religious and charitable character. While this approach spurred the establishment of a much-needed structure for long-term care provision in a context of limited public investment, it did so at the expense of designing the system around the principle of universal rights with all older people's needs at the centre. Re-designing care through joint needs assessment, care pathways and standardized transition of patients, for example, could open new avenues to give older people, their families and caregivers, further say on preferences and priorities. Achieving this would require a shift from the current model of care towards more equitable and integrated delivery.

Organize providers with a focus on primary health care

RNCCI and RSES integration would also require harmonisation of working conditions and wages. Improving the labour conditions of the RSES workforce is a pending assignment; matters to be addressed include low salaries, limited qualification and opportunities to progress professionally, high workload and levels of stress and job instability (Lopes et al., 2018; Spasova et al., 2018). To-date, no initiative grappling with these issues has come forward. An additional entry point would be to strengthening primary health care. The high number of residents without a general practitioner is a major roadblock to decreasing levels of institutionalisation and rates of hospital readmissions without ambulatory contact rates. Coverage needs to be expanded to tackle the unequal distribution of primary health care services, specifically geographical remoteness of providers and lack of out-of-hours care in rural areas (WHO Regional Office for Europe, 2016a).

Prioritize the coordinated management of services sub-nationally

Both the RNCCI and the RSES have quite decentralized management structures, particularly in what concerns the daily management of operations, certification and inspection. Further integration of management could be achieved by taking advantage of existing protocols at the local level. Current casual local and regional coordination team efforts to coordinate RNCCI service delivery could strengthen the more limited RSES management of services carried out by the Institute of Social Security, non-profit providers and municipalities.

Integrate quality standards and procedures for quality management across providers

Efforts are also needed to facilitate continuous professional development at the RNCCI and especially at the RSES. Continuous professional development could take the form of ad-hoc trainings of varied length and intensity that promote the acquisition of new clinical skills, multidisciplinary cooperation and leadership and management enhancements (Barbazza et al., 2015). Service provision would benefit from the integration of standards, processes and indicators across both networks with a greater emphasis on outcomes and processes. RNCCI data collection efforts on benchmarks of quality service should be expanded to the RSES, where no such initiative has been put forward. In fact, monitoring of referrals, transitions, waiting times, user satisfaction, and clinical indicators in the RSES could be assessed jointly with the RNCCI. Similarly, facility licensing, now carried out by the local and regional coordination teams for the RNCCI and by the Institute of Social Security for the RSES, could also be consolidated and abide to similar standards for health and social care entities. The possibility to make some or all the information on quality accessible to providers and users should also be considered to enhance benchmarking and quality improvements. Lastly, harmonization of regulations for services providers should be pursued.

Further entry points, as pointed out by previous research on services delivery integration, include the activation of commissioned reports, audits and performance reviews; health impact or health assessments; and feedback on the performance of health professionals (Barbazza et al., 2015) both at the RNCCI and the RSES level. Additionally, fragmentation of health and social services delivery has been linked with longer administrative procedures and waiting lists (Spasova et al., 2018). Actions are

needed to address these issues that exacerbate the gaps between those who can or cannot afford private provision of services. Lastly, increasing adherence to clinical guidelines could be an opportunity for ensuring care that is up-to-date with the latest available evidence. Guideline development must adhere to internationally accepted standards, i.e. the AGREE II tool to assess the quality and reporting of clinical guidelines and the RIGHT statement, as well as overcome shortcomings in the inclusion of patient values and preferences (Santos et al., 2015).

Deepen the integration between existing sector-spanning actors

RNCCI and RSES integration require governance mechanisms by public stewards to steer services delivery setting towards integrated care (Tello et al., 2013). These include establishing a coherent and comprehensive regulatory and governance framework, addressing the overlapping mandates for the RNCCI and the RSES and enabling coordination in management structures. Further collaboration between ministries and their corresponding agendas will be required, specifically regarding the governance of the RSES. A starting point in pursuing this alignment may consist on assessing the impact of the national coordinating commission on the establishment, roll-out and overall strategic guidance of the RNCCI.

Increase financing and align payment of providers

Another significant barrier to sustain deeper integration overtime is the fragmented financing. Allocation of budgets and setting of priorities and services expansion are the responsibility of the central administration; both the Ministry of Health and Ministry of Labour, Solidarity and Social Security (Lopes et al., 2018; European Commission, 2016). In the wake of the financial crisis and the establishment of tight budgetary procedures, the Ministry of Finance has a final say on many budgetary decisions. This applies particularly to the RNCCI and to services with a higher degree of direct public provision, such as nursing care at home provided by the integrated care teams (European Commission, 2016).

Under the current financing scheme, payments are reimbursed by services rather than outcomes. Currently, there are services that are free at the point of use e.g. services provided in recovery units and services provided by home care teams. However, there are also services that require out-of-pocket payments e.g. only the medical and nursing components of the services provided in the rehabilitation units are free while the social component requires a contribution regulated by law when subsidizes are involved, usually for non-profit providers, and depends on the person's income, assets, dependency level and monthly expenditures. This may likely hinder the efficient allocation of resources, but it may also constitute a barrier to access as the required payments might effectively deter users from benefitting the most appropriate type of service based on their ability to pay (European Commission, 2016; Lopes et al., 2018; Spasova, et al., 2018).

Improve interoperability between the different IT platforms in place

One of the strengths of the long-term care system is the strong IT infrastructure in place, including the RNCCI's GestCare CCI online data management system, the national health system's electronic patient records and electronic medication prescribing, and the individual electronic national health system card. Nevertheless, the interoperability of these platforms is very limited, thus hampering the implementation of urgently needed measures such as joint needs assessment, the creation of integrated entry points into the system, and case management of multi-morbid patients. Interoperability of software is also need for designing and conducting novel quality assurance monitoring measures.

5. Conclusion

This study has applied an approach rooted in systems thinking, people-centredness and integrated care in order to develop a detailed view to population health and well-being needs, the model of health and social services delivery and related system enablers. Through a services delivery lens, the work has ultimately identified actionable policy options for advancing the integrated delivery of long-term care in Portugal.

This study finds the Portuguese model of long-term care provision could be reorganised around the patients' needs to further strengthen integration. Focusing on needs will require single entry points into the long-term care system including a unified needs assessment, explicit care and beneficiary pathways as well as common quality and performance assessment mechanisms. A pro-active, right-to-healthcare approach should be adopted that focuses on anticipating and addressing needs of patients and of unpaid caregivers. The enactment of joint needs assessments based on internationally validated tools is a fitting starting point, which is feasible if built upon the existing IT infrastructure. A system overhaul of this scale will require political commitment for enhancing governance and ensuring effective management at local and regional levels.

The existing basket of services will need to be reorganised to address over-institutionalization and duplication of provision, e.g. the RNCCI long-term support units and RSES residential homes. Combining existing services could also foster patient choice when selecting providers by expanding the available possibilities. Care pathways to health and social care services should be unified by combining the current dual system into a single structure that is managed from the central government and delivered by integrated care teams at regional and local levels, mirroring the current RNCCI model. Services delivery could continue to rely on the existing stakeholders, although encouraging further alignment of the for-profit sector through stronger governance including benchmarking and public reporting while ensuring capacity growth to meet demands. Harmonisation of training, wages and labour conditions of the entire workforce currently delivering long-term care is a key requirement to achieve service integration. Quality assurance and progress can be tracked using the currently available measures already in place under the RNCCI, with a specific emphasis of measuring patient satisfaction and outcomes. The current legislative initiatives to address the needs of unpaid caregivers must provide specific and actionable measures to meet the financial, training and respite needs of these key stakeholders.

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Patients' multiple use for ambulatory care sensitive conditions in Portugal

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ABSTRACT

Introduction

Hospitalizations for ambulatory care sensitive conditions (ACSC) are defined as conditions which, with timely and effective ambulatory care, can be avoided. There are several studies about ACSC but evidence is scarce on patients' multiple use for ACSC. The aim of this study is to characterise the multiple hospitalisations for ACSC in Portugal of patients aged 18 years or older, and to estimate the financial impact of this phenomenon.

Methods

It was developed an observational, descriptive and ecological study to identify the potentially preventable hospitalizations due to ACSC, using administrative discharge dataset from public hospitals of mainland Portugal, between 2013 and 2015, of patients 18 years or older. Within this sample, we identified the patients who had two or more avoidable hospitalizations between 2013 and 2015, and calculated the standardized rates of multiple hospitalizations for ACSC to analyse their geographical distribution.

Results

Of 1,969,844 episodes, 15.3% were admissions for ACSC, of which 25.4% subjects had multiple preventable episodes (with an average of 2.7 episodes per patient between 2013 and 2015). These were older, showed a higher length of stay (+0.81 days) and presented more comorbidities than the patients with only one avoidable admission. There was a higher financial burden related to multiple preventable admissions. Geographic variation of the distribution of multiple avoidable admissions was identified.

Conclusion

Amongst patients with ACSC, multiple use of inpatient services was frequent and associated with specific factors: patients with multiple avoidable admissions were older, had more comorbidities and stayed longer in the hospital compared with patients with a single avoidable admissions. These episodes had a higher financial burden and, geographically, the frequency of the phenomenon was unequally distributed. This highlights the need of further studies in this field in order to define more effective health policies to prevent this events and promote quality of care and efficiency in the health sector.

Keywords: Ambulatory care sensitive conditions, Avoidable hospitalizations, Patients' multiple use, Health policy.

JEL classification: I12.

1. INTRODUCTION

Ambulatory care sensitive conditions (ACSC) are a set of specific conditions for which hospital admissions can be potentially prevented with timely and effective ambulatory care(Caminal et al., 2004; O'Cathain et al., 2013; Rosano et al., 2012; WHO Regional Office for Europe, 2016), through the reduction of the consequences of chronic conditions, the appropriate treatment of acute diseases and the reduction of the incidence of diseases preventable by vaccination(Ansari, 2007; Caminal et al., 2001). These goals can be achieved by patient education, promotion of healthier behaviours and lifestyles, adequate management of chronic diseases, early diagnosis and early treatment(Ansari, 2007; Caminal et al., 2001; Dimitrovová et al., 2017).

Through the years, inpatient hospitalisations for ACSC have been studied in different countries and contexts, strengthening the investigation in this field, and relating this phenomenon with the access, performance and quality of ambulatory care(Magan et al., 2008; Nedel et al., 2011; Purdy, 2010; Rosano et al., 2012; Sanmartin e Khan, 2011). In fact, the rate of hospitalizations for ACSC has already been used internationally in order to evaluate the performance of the health systems(Marshall et al., 2004). In Portugal, it was first integrated in the National Health Plan 2011-2016 (Alto Comissariado da Saúde, 2010), starting to integrate the contractualization process of the primary care institutions and local health units in 2017 (ACSS, 2017).

Regarding the factors that are associated with hospitalizations for ACSC, authors suggest that patients are generally older and show more comorbidities compared to the patients in which hospitalisation is not classified as potentially preventable(Dantas et al., 2016; Sanmartin e Khan, 2011). Research shows that these events may be related to poorer educational or socioeconomic level (Caminal et al., 2004; Sanmartin e Khan, 2011), higher unemployment rates(O'Cathain et al., 2013) or even the area of residence, which can influence the access to care and express different clinical practices between regions(Busby, Purdy e Hollingworth, 2015; DeLia, 2003; Laditka, James N. e Probst, 2009; Magan et al., 2008).

In Portugal, studies have been developed to analyse the incidence of inpatient hospitalisations for ACSC, revealing that the results differ between regions(Sarmento et al., 2015; WHO Regional Office for Europe, 2016) and there is a significant financial impact in these hospitalisations(Lima, Santos e Cardoso, 2017). It was documented the existence of patients who experienced more than one hospitalisation for ACSC in a given period, representing a significant part of the ACSC hospitalizations(Lima, Santos e Cardoso, 2017; Sais et al., 2013; Sarmento e Santana, 2016). However, the research is still scarce about the characteristics of these multiple users of inpatient care for ACSC and the pattern of utilization of these potentially preventable multiple events.

The aim of this study is to characterise the multiple hospitalisations for ACSC in Portugal of patients aged 18 years or older, and to estimate the financial impact of this phenomenon.

2. METHODS

Study Design

To achieve the proposed aim of the study, we developed an observational, descriptive and ecological study to identify the potentially preventable hospitalizations due to ACSC. Within this sample, we identified the patients who had two or more avoidable hospitalizations between 2013 and 2015, and calculated the standardized rates of multiple hospitalizations for ACSC to analyse their geographical distribution.

Data Sources and Inclusion/Exclusion Criteria

Administrative data on inpatient care were provided by the Central Administration of Health System and variables used included sex, age, place of residence, principal diagnosis, secondary diagnoses, procedures, discharge hospital, admission type, admission and discharge dates, discharge status, and an unique patient identifier.

The sample included all patients with 18 years or older, with register of an inpatient admission in a Mainland Portuguese National Health Service hospital who had one or more hospitalizations for ACSC during the period in analysis.

We excluded episodes with missing data (such as the patient unique identifier, gender or place of residence), from specialized hospitals or classified within the Major Diagnostic Category 14 (Pregnancy, Delivery and Puerperium), with Diagnosis Related Group Radiotherapy (because it is a procedure that should be performed in ambulatory and may reveal misclassified episodes), with principal diagnosis of chronic renal failure and 0 days of length of stay (haemodialysis is a procedure that should be performed in ambulatory and may reveal misclassified episodes) and patients with more than 30 episodes in the given period, considered outliers.

From an initial sample of 3,041,447 episodes, it was excluded a total of 1,071,603 admissions related to the exclusion criteria defined, resulting in 1,969,844 for analysis.

Hospitalizations for Ambulatory Care Sensitive Conditions

Hospitalizations for ACSC were identified according to the International Classification of Diseases - Ninth Revision – Clinical Modification (ICD-9-CM) diagnosis code, following the Prevention Quality Indicators (PQI) methodology by the Agency for Healthcare Research and Quality (AHRQ), as listed in Table 1.

A patient was classified as a multiple user for ACSC if between January 2013 and December 2015 was admitted more than once for any ACSC. This was achieved by using an unique patient identifier for each patient through the period in analysis. For the dependent variable definition, it was used the PQI 90, a general composite that aggregates 11 specific PQI, allowing the distinction of the potentially preventable episodes.

Dependent variable was defined as a dichotomous variable where single hospitalizations for ACSC were coded as 0 and patient multiple hospitalizations for ACSC were coded as 1.

For the geographic analysis, it was considered the Nomenclature of Territorial Units for statistical purposes (NUTS) – level III, based on the district and county of residence.

Statistical analysis

It was used descriptive analysis to characterize the single and multiple hospitalizations for ACSC, mainly frequency measures, central tendency and dispersion. The comparison between groups was tested using the Qui-Square test.

The age standardized multiple admission rate for ACSC was calculated, using the European pattern population for 2013.

To estimate the financial impact of the single and multiple avoidable episodes, it was taken in consideration the prices defined according to values published by the Ministry of Health of Portugal. The prices correspond only to the hospital admission and, therefore did not include other pre- and post-hospitalization expenses.

The analysis was conducted using Microsoft Excel 2013 and IBM SPSS Statistics, 24.0 version.

3. RESULTS

The study included 1,969,844 inpatient discharges of Mainland Portuguese National Health Service hospitals, corresponding to 1,220,363 distinct patients aged 18 years or older. Among these episodes, 15.3% (301,334 episodes) were classified as potentially preventable according to the ARQH methodology, corresponding to 210,551 individuals (17.3% of the patients in the initial sample).

Table 2 shows the characterization of the population with a single preventable admission versus multiple preventable admissions between the period in analysis.

Among the 210,551 patients who had preventable episodes in the given period, 25.4% (53,426) subjects had multiple preventable episodes. However, when looking for the representativeness of the preventable episodes of the multiple users versus the single users, it is noted that the multiple preventable episodes represent 47.9% (144,209) of the total of potential preventable admissions. Therefore, patients with multiple preventable admissions had an average of 2.7 preventable inpatient episodes between the years 2013 and 2015, as stated in Table 3.

The category multiple avoidable admissions had a higher proportion of patients aged 65 or above and a higher number of comorbidities, according to the Charlton Index Classification, compared with patients with single preventable admissions. In both cases, the admissions were more frequent in the female gender.

From the episodes analysis point of view, results show that 144,209 episodes where classified as multiple hospitalizations for ACSC, comparing to 157,125 single ones (Table 3). Most of the episodes had an urgent admission, both for single and multiple preventable admissions.

The average length of stay was 0.81 days higher in the multiple admissions episodes compared to the ones who had a single avoidable admission. The same tendency was registered regarding the intra-hospital death, also higher in patients with multiple preventable admissions (33.5% versus 24.6%).

According to the PQI classification, the main preventable causes identified were the bacterial pneumonia, heart failure and urinary tract infection for the single and multiple preventable admissions, representing above 70% of the preventable causes identified in each group.

However, the distribution of the percentage of chronic versus acute causes according to the ARQH's PQI composites differs between the single and multiple avoidable admissions: in the single avoidable admissions, 63.9% of the episodes are classified as acute causes, while in the multiple avoidable admissions 51.3% are classified as chronic causes.

In order to estimate the costs related to the single and multiple avoidable admissions between 2013 and 2015, it was considered the mean value of price for patient's admission. In Table 4 it is shown a trend in multiple avoidable admissions to have a higher financial burden when comparing to the single ones.

To identify possible geographic asymmetries of the multiple preventable admissions incidence, it was calculated the standardized rate by age. Results are shown in Figure 1.

The age standardized multiple preventable admissions rate showed geographic variation between regions in Mainland Portugal, with the lowest rate registered in Alentejo Central region (9.2) and the highest rate in Alto Tâmega region (32.0). In general, the figure shows that there is a higher concentration of the multiple avoidable admissions in the north and centre regions of Mainland Portugal, compared to the rates observed in the south of Portugal.

4. Discussion

The aim of this study was to characterise the multiple hospitalisations for ACSC in Portugal of patients aged 18 years or older, and to estimate the financial impact of this phenomenon. To achieve its main goal, it was conducted an analysis of the main characteristics of the patients (and respective hospital admissions) who had potentially preventable hospital admissions for ACSC between 2013 and 2015, and identified those with multiple preventable episodes in the given period.

Based on the data shown in the results chapter, it is possible to estimate that, between the years of 2013 and 2015, around 15.3% of all hospitalizations of patients aged 18 or older registered in the Portuguese National Health Service were potentially avoidable. These results are align with previous studies, where the estimated rate for preventable hospital admissions in Portugal was situated between 2.6% and 18%(Dantas et al., 2016; Dimitrovová et al., 2017; OECD, 2017; Sais et al., 2013; WHO Regional Office for Europe, 2016). In addition, this data is also close to the results perceived internationally(Bardsley et al., 2013; Magan et al., 2008; Sanmartin e Khan, 2011).

Regarding the identification of multiple avoidable admissions, it was clear that the phenomenon was frequent in the years analysed, given the number of subjects who presented two or more avoidable admissions. These represented 7.3% of the total of episodes of the database and 47.9% of all the preventable admissions, which underlines the high incidence of this phenomenon, as supported by previous studies(Lima, Santos e Cardoso, 2017; Sarmento e Santana, 2016), and the importance of deepening the knowledge about this topic. When analysing from the patients point of view, 4.4% of the individuals with inpatient episodes between 2013 and 2015 had multiple avoidable admissions, which translated into 25.4% of the subjects with avoidable admissions (53,426 individuals).

In general, it was possible to assess that the subjects who experienced multiple avoidable hospitalizations had an average of 2.7 admissions in the three years analysed, were in average older than the subjects who had a single avoidable admission, had a higher length of stay and higher number of comorbidities, according to the Charlton Index Classification. This data display that, even though there is evidence that the patients with hospitalizations for ACSC are generally more complex from the health status and the care point of view(Dimitrovová et al., 2017; Maeng, Hao e Bulger, 2017; Sarmento e Santana, 2016; Saver et al., 2014), there is even a higher trend when it comes to multiple potentially avoidable admissions. Once this conditions are potentially preventable, it is important to evaluate which were the main causes for the events and what could have been done to avoid the repeated hospitalization for this subjects.

Regarding the most frequent causes for avoidable admissions, it was identified that the causes were common for the single and multiple admissions, although these results are different from the outcomes in previous studies(Sarmento e Santana, 2015; Thygesen et al., 2015), which may be related to the methodology used to identify the ACSC, the inclusion/exclusion criteria chosen and/or the coding process itself. It was registered a higher prevalence of chronic causes in the multiple admissions compared to the single ones. This data may point to the fact that people with chronic conditions are more vulnerable to having multiple preventable admissions, which may indicate that there is not an effective health support in the community for this patients, leading them to multiple hospitalizations.

Besides this characteristics, it was also possible to estimate that there is a higher financial burden related to the multiple preventable admissions, i.e., each episode is in average more expensive than a single preventable episode. Therefore, the multiple episodes tend to spend more financial resources, which could be saved if there was an adequate management and prevention of this events. On the other hand, although it may not be possible to avoid all the identified episodes analysed, the intervention on the reduction of part of the potentially avoidable hospitalizations for ACSC would allow a significant decrease in inpatient costs and promote better health results and quality of care, although it may mean a bigger investment in preventive care and monitorisation of chronic patients.

From the geographic distribution point of view, it was noted that the incidence of multiple avoidable admissions across Mainland Portugal varies between regions, with higher concentration in the North and Centre Region, which was previously mentioned in studies developed in Portugal (Rocha, Nunes e Santana, 2019; Sarmento e Santana, 2016; WHO Regional Office for Europe, 2016). In fact, looking at studies developed abroad, it is also frequent to find geographic disparities regarding the incidence of this events(Busby, Purdy e Hollingworth, 2015; Magan et al., 2008; Thygesen et al., 2015), and it would be interesting to study further this asymmetry in the geographic distribution of the multiple hospitalizations for ACSC, identifying which factors may lead to this results, whether it is related to

context factors (such as access to primary care, clinical practices, etc.) or individual factors (such as age, comorbidities, lifestyle, etc.)(Berlin et al., 2014; Magan et al., 2008; Skinner et al., 2016). The detection of geographical areas which present higher rates of this phenomenon is relevant because it can also lead to the identification of critical areas which should be focused in designing local interventions.

In fact, evidence claims that there are several factors that influence the rate of hospital admissions, such as socioeconomic status, accessibility and quality of care, resources available, and integrated care(Agabiti et al., 2009; Caminal et al., 2001; Dimitrovová et al., 2017; Löfqvist et al., 2014; O'Cathain et al., 2013; Sanmartin e Khan, 2011; Santana, 2015). Therefore, it is important to study these individuals and enlighten if these factors are influencing their multiple admissions, so that adequate policies and strategies can be defined to deal with this phenomenon.

From a wider point of view, the hospitalizations for ACSC may indicate the existence of inefficiencies in ambulatory care(Bardsley et al., 2013; Caminal et al., 2004; O'Cathain et al., 2013; Rosano et al., 2012). In its turns, the repeated hospitalizations for ACSC for the same individual may reflect systemic problems, which require a deeper intervention in the health care system and patient pathways, with an adequate and directed strategy defined to approach this phenomenon.

To reduce the multiple admissions for ACSC it is important to prioritize the health interventions, by the individual level (such as self-disease management and support), the program level (such as the support for self-disease management and the health care itself), and the local level (such as available infrastructures e socioeconomic opportunities) (Muenchberger e Kendall, 2010). From the management point of view, it is imperative to have a deeper understanding of the factors related to the multiple admissions for ACSC in order to intervene effectively and preventively, promoting quality of care, and health system efficiency and sustainability, by reducing the costs with hospital admissions (Rosano et al., 2012; Sanderson e Dixon, 2000; Tian, Dixon e Gao, 2012; WHO Regional Office for Europe, 2016).

It is important to approach the limitations of this study. First of all, the study relies on administrative data and their quality to obtain its outcomes, as well as the accuracy of the coding process. On the other hand, the chosen methodology to identify the potentially preventable hospitalizations for ACSC can determine the results of the study(Bourret et al., 2015; Purdy et al., 2009; Sarmento e Santana, 2016). On this matter, it was chosen the PQI methodology by ARQH because it is widely mentioned in literature, with a strict criteria definition and selection, and frequent updates (Laditka, James N. e Probst, 2009). Although it is not validated for Portugal, it has been validated for Italy, which has an universal coverage health system, similar to the Portuguese National Health Service (Dimitrovová et al., 2017; Manzoli et al., 2014), minimizing the contextual differences.

To our knowledge, there is still not enough evidence published about the phenomena of patient's multiple use for ACSC so that it would be possible to compare results, methodologies and even outcomes of projects taking place in this field. Although it may be a limitation to this study, it also grants an innovative character to this research. In this context, it is important to clarify the concept of multiple avoidable admissions and establish the difference between this and the hospital readmissions phenomenon. Although the existing literature show that a high percentage of hospital readmissions are potentially preventable, this data is related to a repeated hospitalization within a delimited period of time (usually within an interval of thirty days after discharge, although it can be defined by a different period of time), and the cause may or may not be related to the previous admission(Benbassat e Taragin, 2000; Lopes et al., 2017; Maurer e Ballmer, 2004). On the other hand, multiple avoidable admissions express the repetition of (potentially avoidable) events for the same individual, in a broader period of time, related with specific potentially preventable causes(Benjamin et al., 2015; Lima, Santos e Cardoso, 2017; Sarmento e Santana, 2016). This approach highlights the systemic failures of the health system in the monitorisation and treatment of individuals, leading them to have a higher use of the health services, poorer health outcomes and increasing the financial burden.

5. Conclusion

In the past years, there were developed several studies approaching the hospitalizations for ACSC, highlighting the importance of the promotion of integrated care.

In this study, the aim was to analyse the characteristics of multiple use for ACSC in Portugal and estimate its financial impact.

Amongst patients with potentially preventable admissions, multiple use of inpatient services was frequent and associated with specific factors: patients with multiple avoidable admissions were older, had more comorbidities and stayed longer in the hospital compared with patients with a single avoidable admissions.

Geographically, the frequency of the phenomena was unequally distributed, with a higher incidence in the North and Centre Regions.

The episodes of multiple users for ACSC were, in average, more expensive than the single ones, having a predictive more expressive financial impact.

Our findings highlight the magnitude of multiple avoidable hospitalizations in Portugal. However, it is important to develop further investigation in this field, in order to get a deeper understanding of the phenomenon. The utilization of this indicator goes beyond the evaluation of the performance of health institutions as stated before, but will allow the definition of strategies that promote value based healthcare and the reduction of the costs related to inpatient care.

In this context, it is recommended to identify, assess and evaluate health policy interventions that not only improve ambulatory care and ensure timely, appropriate and effective ACSC disease management, but also promote integrated care amongst all players involved (hospitals, primary care, patients, community resources, etc.). These health policies may be promoted locally, according to the characteristics and health needs identified in a given region, but also nationwide, promoting a health system where the patient is indeed in the centre of care.

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TABLES AND FIGURES

TABLE 1 - ACSC IN PQI-90 COMPOSITE, DEFINED BY AHRQ.

Prevention Quality Indicator	Definition
PQI 01. Diabetes Short-Term Complications	Admissions for a principal diagnosis of diabetes with short-term complications (ketoacidosis, hyperosmolarity, or coma) per 100,000 population, ages 18 years and older. Excludes obstetric admissions and transfers from other institutions.
PQI 03. Diabetes Long-Term Complications	Admissions for a principal diagnosis of diabetes with long-term complications (renal, eye, neurological, circulatory, or complications not otherwise specified) per 100,000 population, ages 18 years and older. Excludes obstetric admissions and transfers from other institutions.
PQI 05. Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults	Admissions with a principal diagnosis of chronic obstructive pulmonary disease (COPD) or asthma per 100,000 population, ages 40 years and older. Excludes obstetric admissions and transfers from other institutions.
PQI 07. Hypertension	Admissions with a principal diagnosis of hypertension per 100,000 population, ages 18 years and older. Excludes kidney disease combined with dialysis access procedure admissions, cardiac procedure admissions, obstetric admissions, and transfers from other institutions.
PQI 08. Heart Failure	Admissions with a principal diagnosis of heart failure per 100,000 population, ages 18 years and older. Excludes cardiac procedure admissions, obstetric admissions, and transfers from other institutions.
PQI 10. Dehydration	Admissions with a principal diagnosis of dehydration per 100,000 population, ages 18 years and older. Excludes obstetric admissions and transfers from other institutions.
PQI 11. Bacterial Pneumonia	Admissions with a principal diagnosis of bacterial pneumonia per 100,000 population, ages 18 years and older. Excludes sickle cell or haemoglobin-S admissions, other indications of immunocompromised state admissions, obstetric admissions, and transfers from other institutions.
PQI 12. Urinary Tract Infection	Admissions with a principal diagnosis of urinary tract infection per 100,000 population, ages 18 years and older. Excludes kidney or urinary tract disorder admissions, other indications of immunocompromised state admissions, obstetric admissions, and transfers from other institutions.
PQI 14. Uncontrolled Diabetes	Admissions for a principal diagnosis of diabetes without mention of short-term (ketoacidosis, hyperosmolarity, or coma) or long-term (renal, eye, neurological, circulatory, or other unspecified) complications per 100,000 population, ages 18 years and older. Excludes obstetric admissions and transfers from other institutions.
PQI 15. Asthma in Younger Adults	Admissions for a principal diagnosis of asthma per 100,000 population, ages 18 to 39 years. Excludes admissions with an indication of cystic fibrosis or anomalies of the respiratory system, obstetric admissions, and transfers from other institutions.
PQI 16. Lower-Extremity Amputation Among Patients with Diabetes	Admissions for any-listed diagnosis of diabetes and any-listed procedure of lower-extremity amputation (except toe amputations) per 100,000 population, ages 18 years and older. Excludes any-listed diagnosis of traumatic lower-extremity amputation admissions, obstetric admissions, and transfers from other institutions.

Source: AHRQ, 2016.

TABLE 2 - DEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF PATIENTS BY FREQUENCY OF EPISODES /ADMISSIONS: SINGLE PREVENTABLE ADMISSIONS AND MULTIPLE PREVENTABLE ADMISSIONS.

Variables	S.P.E.	S.P.E. (%)	M.P.E.	M.P.E. (%)	Total P.E.	Group comparison
Age Group*						
18 - 24 years	1 836	**1,20%**	269	**0,50%**	**2 105**	Chi-Square= 42.29 ; p<0.001
25 - 64 years	33 714	**21,50%**	7 506	**14,05%**	**41 220**	
≥ 65 years	121 575	**77,40%**	45 651	**85,45%**	**167 226**	
Gender*						
Female	82 792	**52,70%**	27 282	**51,07%**	**110 074**	Chi-Square= 1 620.92 ; p<0.001
Male	74 333	**47,30%**	26 144	**48,93%**	**100 477**	
Charlson Co-Morbidity Index*						
0	31 150	**19,80%**	5 138	**9,62%**	**36 288**	Chi-Square= 4 465.53 ; p<0.001
1	45 372	**28,90%**	13 635	**25,52%**	**59 007**	
2	35 002	**22,30%**	13 486	**25,24%**	**48 488**	
3	20 407	**13,00%**	9 043	**16,93%**	**29 450**	
4	11 356	**7,20%**	5 695	**10,66%**	**17 051**	
5	5 704	**3,60%**	3 360	**6,29%**	**9 064**	
6	4 206	**2,70%**	1 791	**3,35%**	**5 997**	
≥ 7	3 928	**2,50%**	1 278	**2,39%**	**5 206**	
Total (Subjects)	**157 125**	**-**	**53 426**	**-**	**210 551**	**-**

Source: Elaborated by the author.

P.E. = Preventable Episodes

S.P.E. = Single Preventable Episodes

M.P.E. = Multiple Preventable Episodes

*Applied Qui-Square test. Difference between groups statistically significant (p<0.001)

TABLE 3 - PREVENTABLE EPISODES CHARACTERISTICS BY FREQUENCY OF ADMISSION: SINGLE PREVENTABLE ADMISSIONS AND MULTIPLE PREVENTABLE ADMISSIONS.

Variables	S.P.E.	S.P.E. (%)	M.P.E.	M.P.E. (%)	Total P.E.
Admission Type					
Elective	7 068	**4,5%**	6 557	**4,5%**	**13 625**
Urgent	149 881	**95,4%**	137 517	**95,4%**	**287 398**
Other	176	**0,1%**	135	**0,1%**	**311**
Intra-Hospital Death	**38 629**	**24,6%**	**48 355**	**33,5%**	**86 984**
Average Length of Stay (days)	**9,65**	**-**	**10,46**	**-**	**10,04**
Preventable Causes					
Diabetes Short-Term Complications**	2 614	**1,7%**	2 000	**1,4%**	**4 614**
Diabetes Long-Term Complications**	6 587	**4,2%**	8 402	**5,8%**	**14 989**
COPD or Asthma in Older Adults**	11 762	**7,5%**	19 335	**13,4%**	**31 097**
Hypertension**	3 755	**2,4%**	2 097	**1,5%**	**5 852**
Heart Failure**	28 091	**17,9%**	38 293	**26,6%**	**66 384**
Dehydration*	6 094	**3,9%**	3 587	**2,5%**	**9 681**
Bacterial Pneumonia*	64 472	**41,0%**	43 628	**30,3%**	**108 100**
Urinary Tract Infection*	29 817	**19,0%**	24 273	**16,8%**	**54 090**
Uncontrolled Diabetes**	2 234	**1,4%**	1 139	**0,8%**	**3 373**
Asthma in Younger Adults**	661	**0,4%**	243	**0,2%**	**904**
Lower-Extremity Amputation Among Patients with Diabetes**	1 707	**1,1%**	2 330	**1,6%**	**4 037**

Total (Episodes)	**157 125**	**-**	**144 209**	**-**	**301 334**
Mean of episodes per subject	1,0	-	2,7	-	-

Source: Elaborated by the author.

P.E. = Preventable Episodes

S.P.E. = Single Preventable Episodes

M.P.E. = Multiple Preventable Episodes

*Belongs to the Prevention Quality Acute Composite (PQI 91) according to ARQH

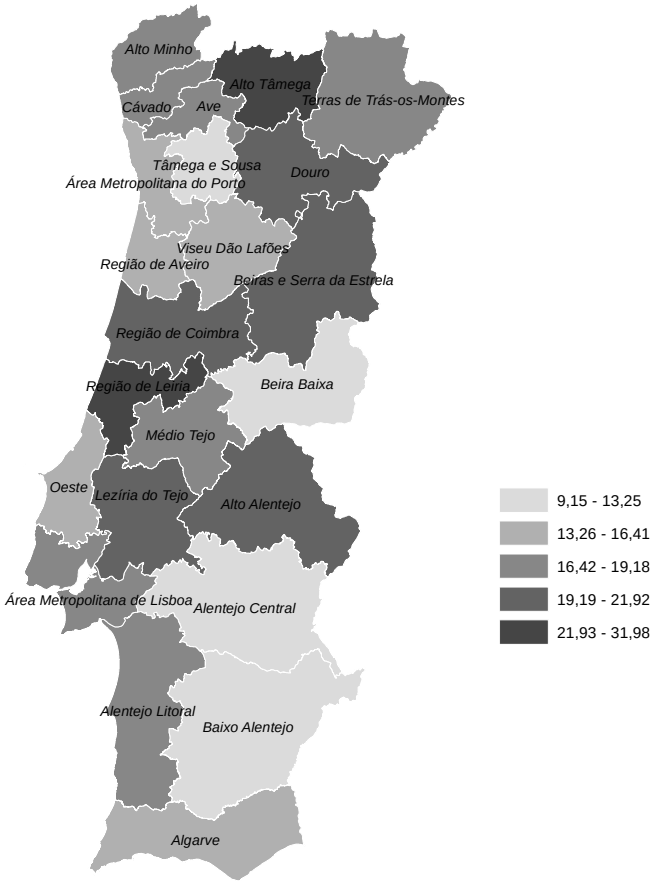
** Belongs to the Prevention Quality Chronic Composite (PQI 92) according to ARQH

TABLE 4 - FINANCIAL BURDEN OF SINGLE AVOIDABLE ADMISSIONS VS. MULTIPLE AVOIDABLE ADMISSIONS.

	Single avoidable admission		Multiple avoidable admission	
Statistics	**Price for patient's admission**	**Default error**	**Price for patient's admission**	**Default error**
Mean	2 337,15 €	8,59503	2 377,10 €	6,40929
95% CI	(2320.3€ ; 2354.0€)	-	(2364.5€ ; 2389.7€)	-
Median	1 870,72 €	-	1 938,15 €	-
Standard Deviation	3 406,98 €	-	2 433,92 €	-
Minimum	423,21 €	-	423,21 €	-
Maximum	133 504,49 €	-	133 504,49 €	-

Source: Elaborated by the author.

FIGURE 1 - AGE STANDARDIZED MULTIPLE PREVENTABLE ADMISSIONS RATE (2013-2015) FOR PREVENTABLE CAUSES, PER 1,000 INHABITANTS



Source: Elaborated by the author.

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Primary health care reforms in Brazil and Portugal

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ABSTRACT

Primary health care has been established as a core policy for the World Health Organization, guiding countries to expand and consolidate primary care to develop their health systems. Brazil and Portugal have reformed their primary care in the last years, according to the needs of the population and the positive results of innovative experimental projects on health services delivery. This article compares the public policy reform experience in Brazil and Portugal. Firstly, it describes the processes that lead to the primary care reforms in both countries, comparing organizational

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characteristics. Secondly, positive results and obstacles faced are described and compared. Both countries share similarities in the organization of primary care, and the establishment of family health units is one of the most visible aspects of the reforms. There is evidence of some positive results associated to the reform in both countries. Primary care is responsible for a substantial share of the health care budget, making it important to identify possible obstacles it faces and potentials for improvement. The analysis of the introduction of public policies associated to positive results and strategies to overcome some of the challenges faced can prompt a cross-country learning experience between Brazil and Portugal.

Keywords: Public health policy, Primary health care, Brazil, Portugal.

JEL classification: I18, N34, N35.

1. INTRODUCTION

The Declaration of Alta-Ata of 1978 defined Primary Health Care (PHC) as the first level of contact of individuals, family and community with the health system; where health care is provided through practical, scientifically sound and socially acceptable methods and technology made universally accessible (World Health Organization, 1978). Since then, PHC has been established as a core policy for the World Health Organization (WHO), which has guided countries to expand and consolidate PHC aiming the development of their health systems (World Health Organization, 2008). In 2018, the Astana declaration on PHC was elaborated, 40 years after the Declaration of Alma-Ata. This new declaration reaffirms the critical role of PHC in addressing health needs of the population, with quality, equity and efficiency (World Health Organization, 2018).

The PHC can be understood as the provision of accessible and integrated health services by health professionals responsible for managing most of the population's health needs, developing a sustainable partnership with patients, exercised within the family and community context and with emphasis in actions capable of minimizing or avoiding acute episodes resulting from complications linked to chronic diseases (Starfield et al., 2005).

Brazil and Portugal have reformed their PHC in the last years, with similar organizational characteristics and objectives. Both countries have reorganized their health systems around PHC as a public policy. Brazil and Portugal have universal access to integral health guaranteed by their Constitutions, and provided by national health systems and by the private sector. The public health services are offered and financed by the government through tax payments. The main objective of this study was to compare the PHC reform experience of Brazil and Portugal. The specific objectives were as follow:

- Describe the history and the process of implementation of the PHC reforms;
- Describe and compare the organization of PHC according to resourcing, planning of services, performance assessment and financing;
- Review and present empirical results associated to the PHC reforms, in the dimensions of health outcomes, economic impact, access and satisfaction of population and professionals;
- Review and discuss obstacles faced by PHC in both countries.

A review was employed to address these topics through different study designs, including legal policy documents, national and international research articles and grey literature. The results were presented in a descriptive manner, following the dimensions proposed by the specific objectives. It is expected that the analysis and comparison of both countries historic experience, organization, positive results and obstacles can allow the identification of key aspects associated to desirable health outcomes, prompting cross-country learning and expanding policy options.

2. BACKGROUND

2.1. The Brazilian PHC history

PHC in Brazil has its origin in the Health Centers in São Paulo in the 1920s (Lavras, 2011; Mendes, 2012). These centers had a defined population covered and offered actions in health education, promotion and disease prevention. In the 1960s, there was an expansion of health centers linked to the State Health Secretariats, with actions directed mainly at maternal and child care and at infectious diseases (Mendes, 2012). During the military period, initiated in 1964, the government's decision was to expand and strengthen private health services (Bravo, 2006; Paim et al., 2011; Paiva and Teixeira, 2014), which limited access to health for a portion of the population. Financial resources were reallocated from health to social security, as the public health sector was deemed inefficient (Paiva and Teixeira, 2014), which lead to a market-based health vision aiming at profits. Some measures were taken to provide medical assistance to the vulnerable population, with the private and public-funded systems running side-by-side (Paiva and Teixeira, 2014).

The 1970s are defined as the origin of the Brazilian sanitary reform, which criticized the low funding, the lack of coordination and the limits of access to care in the system (Gragnolati et al., 2013; Lavras, 2011; Paiva and Teixeira, 2014). Subsequently, the first experiences of community medicine emerge, with the support of the universities and participation of the municipalities in the development of PHC (Lavras, 2011). In 1985 the military period comes to an end and a public health system begins to be developed during the 8th National Health Conference.

In 1988, a new federal constitution was enacted, establishing the Unified Health System [Sistema Único de Saúde- SUS], the National Health System of Brazil. The SUS is organized by the principles of universality, decentralization, integral care and community participation. Public health actions and services are part of a regionalized and hierarchical network. The decentralization proposed for the SUS ensure accountability in provision of health services and permits more independence to the municipalities, while expanding federal supervision and resources (Couttolenc and Dmytraczenko, 2013; Paim et al., 2011). The decentralization aims at greater resolution to the system. The decision-making process operates according to an institutionalized structure of bipartite (state) and tripartite (federal) committees. This structure defines the responsibility of each level and facilitates consensus among them. Since its creation in 1990, the SUS has made consistent progress towards delivering universal and comprehensive health care to the Brazilian population, helping to reduce inequalities in health care access and the achievement of better outcomes, but not without facing challenges (Castro et al., 2019).

The decentralization contributed to the expansion and strengthening of PHC, since the delegation of responsibility for health to municipalities led to the expansion of PHC centers. At the same time, several local experiences of PHC models have been developed in various parts of the country (Mendes, 2012). One of the most significant experiences was developed in the Northeast region (Paim et al., 2011; Wadge et al., 2016). In this pioneering model, community health agents joined physicians and generalist nurses, who formed a team that worked with populations defined territorially (Mendes, 2012). The positive results of this model for epidemiological indicators led the Ministry of Health, in 1991, to extend it across Brazil under the name of Community Health Agents Program [Programa de Agentes Comunitários de Saúde- PACS]. In 1994, the Ministry of Health institutionalized the Family Health Program as the official public policy for PHC in Brazil. Subsequently in 2002, the program is defined as Family Health Strategy [Estratégia Saúde da Família-ESF].

The PHC reform in Brazil, through the ESF, has launched one of the largest community-based primary care programs in the world (Macinko et al., 2010). The objective of the ESF is defined as:

> "To contribute to the reorientation of the care model based on basic care, in accordance with the principles of the SUS, imparting a new dynamic of action in the PHC centers, with defined responsibilities between health services and the population" (Brasil, 1997)

2.2 The Portuguese PHC history

Until the 1940s, the health situation in Portugal was fragile and a response from the state was necessary (Marques, 2015). In 1946, the Federation of Pension Funds was created, offering medical care nationwide. Its creation allowed the expansion of the provision of care in form of social

insurance. In 1971, early health centers were established in Portugal, later known as "first generation" (Branco and Ramos, 2001; Miguel, 2013). These centers developed activities such as vaccination and maternal and child health (Branco and Ramos, 2001; Miguel, 2013; Monteiro et al., 2017b).

In 1979 the National Health System of Portugal was created [Serviço Nacional de Saúde- SNS]. The Constitution guarantees the right to health protection for the population. There are fees charged when accessing the health system to rationalize the use of consultations and procedures, with exemption rules for specific populations (lower socioeconomic status, pregnant women, people under 18 years, firefighters, blood donors, among others) (Moreira, 2012; Santos et al., 2015). The SNS has administrative and financial autonomy. The central management is the responsibility of the Ministry of Health. At the regional level, the management is the responsibility of the Regional Health Administrations [Administração Regional de Saúde- ARS] of the five health regions of the country. Other bodies are responsible for local management.

After the creation of the SNS and the legal recognition of the medical career of general practice, second generation health centers emerged. These integrated institutions devoted to preventive care and public health services (the first-generation health centers), with structures that provided curative outpatient clinical care in the community, named Social Health Insurance Services [Serviços Médico Sociais das Caixas de Previdência]. At that time, PHC reached widespread coverage in the national territory (Branco and Ramos, 2001). However, the model of care management and organization were insufficient to meet the needs of the population and the professionals' expectations (Miguel, 2013; Monteiro et al., 2017b). There were experimental projects of organization and remuneration seeking to improve access and quality. The Alfa Project (1996) promoted teamwork and autonomy, based on health accountability. The Experimental Remuneration Regime (1998), which allowed voluntary membership of teams, introduced a new remuneration system associated with the amount of work and quality of performance.

The success of these experiences served as the basis for a strategic reform of primary care in Portugal starting in 2005. The Mission for Primary Health Care [Missão dos Cuidados de Saúde Primários- MCSP] was created (Council of Ministers Nº 157/2005) to carry out the project of launching, coordinating and monitoring the reconfiguration of health centers and implementation of the Family Health Units [Unidades de Saúde Familiar- USF] and of the Groups of Health Centers [Agrupamentos de Centros de Saúde- ACES]. The experimental projects provided management autonomy to professionals in the local level, therefore the decentralization became an important goal of the PHC reform. It was expected that the decentralization would be consolidated with the creation of the ACES and their management autonomy to decide and implement actions according to available resources and needs of the population.

The objective of this reform was to improve accessibility, efficiency, quality and continuity of care, increasing the satisfaction of the population and professionals (Organization for Economic Co-operation and Development, 2015). The PHC reform comprises:

> "The creation of legal and operational instruments to recenter the Portuguese health system in PHC and the development of an organizational matrix that will lead to the reconfiguration of health centers aimed at achieving health gains and improving accessibility" (Decree-law Nº 298 of 22 of August of 2007)

3. Organization of the PHC

3.1 PHC in Brazil

Mendes (2011) points out that the effective management of chronic conditions cannot be done through a hospital-centered care model and primarily focused on acute episodes. Brazil has been facing the consequences of the epidemiological transition process, with the increase in the volume of chronic diseases, such as diabetes, circulatory diseases and cancer (Marinho et al., 2018). The Brazilian situation does not differ from that observed in the rest of the world. It is estimated that between 40 and 50% of Brazilians over 40 years old are hypertensive and six million are diabetic (Marinho et al., 2018). The disease burden modification process in Brazil required alternatives to be analyzed to provide more effective health care. In this context, PHC has taken a prominent position,

as it modifies the logic of health service delivery by changing the focus on actions, prevention and health promotion.

In Brazil, the family health model seeks to act on the social determinants of health through integrated health actions, focused on prevention and health protection, with community participation (Lavras, 2011; Mendes, 2012; Sampaio, 2010). Through the territorialization of the population, health teams define their activities according to local needs. The actions and activities of primary care and the establishment of the teams are responsibility of the municipalities.

New guidelines of the National Primary Care Policy [Política Nacional da Atenção Básica- PNAB] approved in 2017 determine that the family health team is composed of at least one physician, preferably of the specialty of family medicine and community; one nurse, preferably specialist in family health; auxiliary and/or technician nurse and community health agents [Agentes Comunitários de Saúde- ACS]. The ACS are residents of the community where the ESF teams work (therefore they have knowledge of the local reality), are hired as municipal employees and are trained to carry out their duties, which include to register the population, to conduct home visits, to perform disease prevention activities and to plan, manage and evaluate developed actions jointly with other members of the team. The number of ACS should be defined according to epidemiological and socioeconomic data of the population (the former version of the PNAB (2011) determined that the number of ACS per team could be a maximum of 12, with a maximum of 750 persons per ACS).

Other professionals can be added to the team, according to the needs and characteristics of the organization of the local health services, such as agents to combat endemics and oral health professionals: dental surgeon, preferably family health specialist; and auxiliary or oral health technician. All professionals are supposed to have exclusive dedication to their teams. Each ESF team should be responsible for a population of 2,000 to 3,500 people. Starting in 2008, ESF teams also started to count with Family Health Support Centers [Núcleos de Apoio à Saúde da Família- NASF], in which professionals from different backgrounds provide support to a specific group of ESF teams, according to the community needs defined by the local manager.

Health facilities that provide PHC services through SUS are called Basic Health Units [Unidade Básica de Saúde- UBS], and the ESF is the strategy used to expand and consolidate primary care. There are other alternative models of primary care, being more common the traditional model, characterized by the lack of focus in the family, usually without territoriality and with the medical work focused on general practice, pediatrics, gynecology and obstetrics (Mendes, 2012). Moreover, in the traditional model, the presence of ACS is not required in the minimum composition of the teams (Morosini et al., 2018).

Health financing in Brazil is tripartite, involving resources from the Union, states and municipalities. With the introduction of Basic Operational Standards and the creation of the Basic Health Care Package [Piso da Atenção Básica- PAB], the transfer of federal resources to municipalities became regular and automatic. The financial resources of PHC are composed of a fixed and a variable component. The fixed component consists of a national value, which varies from R$ 23 to R$ 28 per inhabitant per year, based on the groups in which the municipalities are distributed. The definition of groups is made according to social and economic indicators. The variable component consists of specific incentives conditioned to the adhesion and implementation of certain programs and actions determined by the Ministry of Health, being important to mention among them the ESF, PACS, Oral Health teams, NASF, among others (Ordinance Nº 204, of 29 of January of 2007). Starting in 2003, the Brazilian government has institutionalized the performance assessment of the PHC. Among the existing programs, there is the Program for the Improvement of Access and Quality of Primary Care [Programa de Melhoria do Acesso e da Qualidade da Atenção Básica- PMAQ-AB], which evaluates the performance of health teams and induces the improvement in quality of health services. The PMAQ-AB is currently on its third cycle, being responsible to evaluate nearly 42,000 primary care teams.

3.2 PHC in Portugal

The PHC reform in Portugal integrates a top-down and a bottom-up approach. The top-down vector consists of the MCSP administration and the restructuring of the Central Administration of the Health System [Administração Central do Sistema de Saúde - ACSS]. The bottom-up vector consists of the involvement of professionals in the formulation of the reform and the voluntary character of the adhesion of professionals to USF.

The USF provide individual and family health care through multiprofessional teams, with organizational, functional and technical autonomy, integrated in a network with other functional

units. The teams have a voluntary constitution and operate in health centers run by the state. The teams consist of three to eight physicians (who must have a specialty in general and family medicine, and are responsible for 4 to 12 patient lists, with 1,500 people in each list), approximately the same number of nurses, and fewer number of administrative staff. USF professionals are hired as civil servants. The users are registered to the teams of their geographic region, and each USF must have between 4,000 and 18,000 registered users, according to the geodemographic characteristics of the population covered and the number of available professionals. USF have internal regulations, information systems and clinical management processes.

ACES were established in 2008. ACES are health services with administrative autonomy, formed by several functional units. The purpose of ACES is to provide primary care to the population of a given geographical area, which should be between 50,000 and 200,000 people. The ACES have no financial autonomy; the Ministry of Health allocates public funds to the ARS, which finances the ACES through contract-programs, defining quantitative and qualitative objectives. The ACES establishes an annual action plan with the USF and finance their services. This contratualization process includes the performance monitoring and assessment of activities, according to a list of indicators in different dimensions (Administração Central do Serviço de Saúde, 2017).

USF are categorized into three development models, with different levels of organizational autonomy and levels of compensation and incentives to professionals (Decree Law Nº 28, of 22 of August of 2007). Model A corresponds to a phase of learning and improvement of the work, being an indispensable stage for the adaptation to a new culture. In this model, the individual remuneration of professionals is mostly composed of the fixed salary, with the possibility of receiving financial incentives based on the contracting of services and objectives; these incentives must be invested in the USF (in infrastructure, equipment or training). Model B indicates a higher level of organizational maturity, in which professionals have higher demands in performance. In addition to individual compensation and staff incentives (as in Model A), staff can receive individual financial incentives based on a series of indicators contracted both at individual and team levels. The choice of indicators is made according to population characteristics and the performance of other USF, and should be challenging but also achievable (Vital and Teixeira, 2012). Model C is experimental and has not yet been implemented in any USF. This model allows the participation of the private sector.

The ACES includes other functional structures with multiprofessional teams, with organizational and technical autonomy and intercooperation with the other functional units. The Customized Health Care Units [Unidades de Cuidados de Saúde Personalizados - UCSP] have a structure identical to the USF and provide personalized care to the enrolled population in the dimensions of accessibility, continuity and universality. These units are characterized by vertically hierarchical work, without incentive mechanisms and less autonomy than USF (Biscaia and Heleno, 2017). The Public Health Units [Unidades de Saúde Pública - USP] develop epidemiological surveillance actions, elaboration of information and plans in public health and coordination of programs and projects for prevention, promotion and protection of health. The Units of Care in the Community [Unidades de Cuidados na Comunidade - UCC] provide home and community health care, as well as psychological and social support, especially to the most vulnerable population. The Units of Shared Care Resources [Unidades de Recursos Assistenciais Partilhados - URAP] have professionals from different backgrounds (social workers, physiotherapists and organizational therapists, among other) to provide support to all functional units. These units lack planning for allocation of resources and professionals, falling behind in the contratualization process (Serviço Nacional de Saúde, 2017).

3.3 Comparing organizational characteristics

Table 1 summarizes some organizational characteristics of the PHC introduced by the reforms in Brazil and Portugal. The establishment of USF is one of the most visible aspects of the organization of PHC in both countries. The experiences that anticipated and boosted the PHC reform in Portugal were mostly based on the autonomy of USF teams and compensation schemes that reward performance, and these are important attributes of the current PHC organization of the country. Portugal established different models that USF can achieve, according to level of development, autonomy and associated compensation. In Brazil, the different modalities of ESF and their financial transfers are based on the population covered and development level of the municipality (Ordinance Nº 822, of 17 of April of 2008).

In Brazil, the PACS experience in the early 90s introduced one of the main components of the ESF, which is the extensive and effective use of ACS as part of the ESF teams. There are no professionals in

the Portuguese USF which could be considered equivalent to ACS. The ESF teams in Brazil are responsible for activities and health prevention and promotion, elaboration of plans and activities and home community care. In Portugal, USF teams are mostly responsible for medical services, as there are other PHC functional units providing other PHC-related services. Among these functional units in Portugal there are the URAP which provide support to teams, comparable to the NASF in Brazil. In Portugal the USF teams are grouped voluntarily and the physicians must be specialists in general and family medicine. In Brazil this is not mandatory, although it is preferred. In both countries the USF coexists with traditional PHC health centers.

The health systems in Brazil and Portugal are decentralized. In Brazil there are defined responsibilities for the federal, state and municipal level. Municipalities are responsible for planning and executing health activities, as well as establishing ESF teams through individual selection processes. In Portugal the ACES were created to manage the PHC in specific geographic areas, that can comprise several municipalities or areas in the same municipality. A recent law established the municipalization process for social areas in Portugal (including health), in which competences are transferred for local authorities (Assembly of the republic- Law Nº 50/2018). The impact of this process in PHC is still unclear.

TABLE 1 - ORGANIZATIONAL CHARACTERISTICS OF PHC IN BRAZIL AND PORTUGAL

	Brazil	Portugal
Objectives	Reorient the work process in PHC, articulated to the family and community context, to increase the resolution and impact on the health situation of the population.	Improve PHC accessibility, efficiency, quality and continuity of care and increase the satisfaction of professionals and citizens.
Responsabilities	The municipalities are responsible for the actions and activities of PHC and team management	The ACES are responsible for the actions and activities of PHC, under the administration of the ARS.
Family Health Teams		
Composition	At least one physician, preferably of the specialty of family medicine and community; one nurse, preferably specialist in family health; auxiliary and/or technician nurse and community health agents. Other professionals can be added to the team as needed.	Three to eight physicians, who must have a specialty in general and family medicine, and are responsible for 4 to 12 patient lists, with 1,500 people in each list; approximately the same number of nurses, and fewer number of administrative staff
Employment	Hired individually as civil servants or under temporary contracts.	Voluntary self-selecting teams, hired as civil servants.
Coverage	Each team should be responsible for a population of 2,000 to 3,500 people.	Each team should have 4,000 to 18,000 registered users.
Work process		
Definition of health actions	Teams define action plans. The Union, State and Municipality are part of the decision-making process of health actions.	Teams have autonomy to define action plan and internal organization. Teams contratualize actions and objectives with the ACES; which contratualize with the ARS.
Monitoring	Systematic monitoring, responsibility of the Union, states and municipalities.	The contratualization process includes the performance monitoring and assessment of activities by the ACESs and ARSs, according to a list of indicators.
Financing	Health financing is tripartite, involving resources from the Union, states and municipalities. Resources are composed of a fixed and a variable component. The variable component consists of specific conditional incentives based on adhesion and implementation of programs and performance.	The Ministry of Health and the ACSS allocates public funds to the ARS. The ARS finances services through contract-programs with the ACES, which finances the USF. Payment systems for staff varies according to development model of the USF, with team and individual incentives

Source: Elaborated by authors.

4. RESULTS ASSOCIATED TO PHC REFORMS

4.1 Health outcomes

In Brazil, studies have found that the implementation and expansion of the ESF has been associated to positive health outcomes. Several studies have found an association between higher ESF coverage and lower post-neonatal and infant mortality (Aquino et al., 2009; Bastos et al., 2017; Macinko et al., 2006; Rocha and Soares, 2009). In particular, the ESF has been linked to reductions in mortality due to diarrhea and respiratory infections in children (Macinko et al., 2006; Rocha and Soares, 2009). For adults, the expansion of the ESF has been associated to reductions in mortality from heart and cerebrovascular diseases (Rasella et al., 2014) and in hospitalizations for ambulatory care sensitive conditions (Dourado et al., 2011; Macinko et al., 2011; Pinto and Giovanella, 2018). This effect was not necessarily seen in the whole population and for all conditions (Bastos et al., 2017). This impact of the ESF on health outcomes has not been homogeneous across the country, with large and significant improvements in municipalities in the poorest regions of Brazil and with worse initial health conditions (Aquino et al., 2009; Rocha and Soares, 2009).

In Portugal, official reports indicated that the model B USF have presented better performance than model A USF and traditional PHC centers, according to indicators of health promotion and prevention indicators (Entidade Reguladora da Saúde, 2016; Organization for Economic Co-operation and Development, 2015). It is unclear whether this is due to a positive effect of the organization model or self-selection of high-performing healthcare professionals to these models. (Pestana et al. 2019). The proportion of controlled diabetics and hypertensive patients with controlled blood pressure are higher in model B USF (Organization for Economic Co-operation and Development, 2015). These units have also presented higher proportion of enrolled female users aged between 50 and 70 years with mammogram recorded between 2012 and 2014; enrolled adult users aged between 50 and 75 years with colon and rectal cancer screening performed and enrolled users with complete vaccination series (Entidade Reguladora da Saúde, 2016).

Descriptive reports indicate that rates of hospitalizations for ambulatory care sensitive conditions have been declining since the beginning of the PHC reform and are among the lowest of the OECD countries, suggesting good quality of PHC in Portugal (Organization for Economic Co-operation and Development, 2015; Simões et al., 2017). In other study, a difference-in-difference analysis did not suggest statistical significant impact of USF on rates for of hospitalizations for ambulatory care sensitive conditions, indicating that these events are more related to the demographic and socioeconomic characteristics of the population (Pestana et al. 2019). A study found that, in three ACES of Portugal, in was expected that the contract process introduced by the PHC reform in the country contributed to the longitudinal increase in the proportion of specific health services usage and screening indicators (Monteiro et al., 2017a). To the best of our knowledge, there are no studies of the impact of the healthcare reform on patient outcomes.

4.2 Economic impact

In Brazil, there is evidence suggesting that the ESF is a highly cost-effective approach to provide PHC and to promote health improvements, especially in poor areas (Rocha and Soares, 2009). This analysis was done taking into consideration the cost per person covered by the ESF (estimated at around US$50), the mortality reductions associated to the ESF expansion and the available estimates in the literature for the value of a statistical life. The focus on poorer regions and on vulnerable population may have contributed to the increase of equity in healthcare utilization (Macinko and Lima-Costa, 2012a).

In Portugal, some studies provide indications of economic impact associated to PHC reform when comparing expenditure associated to medications and complementary diagnostics and therapeutics, both between the two USF models and traditional PHC centers (Entidade Reguladora da Saúde, 2016; Pisco, 2011) and in time intervals for selected ACES (Monteiro et al., 2017a). The economic efficiency of USF has also been indicated thought data envelopment analysis (Miguel, 2013) and stochastic discrete event simulation models (Fialho, 2008) using total expenditure and remuneration of professionals, as well as costs of medication, diagnostic tests and other treatments. Other study compared performance of units that had the pay-for-performance scheme introduced, according to a set on indicators (Perelman et al., 2016). Results indicate that there is a maximum performance that units reached from which no additional gains can be achieved. Authors recommend that indicators and targets should be regularly reviewed to avoid excessive focus on specific dimensions (Perelman

et al., 2016). Evidence is this subject is still lacking, as it has not been confirmed that these positive findings are results from the PHC reform, therefore further studies are necessary (Pestana et al., 2019; Soranz et al., 2017).

4.3 Access

The ESF in Brazil had a rapid expansion in the beginning of the 2000s, which has been facilitated by the increase of federal transfers to PHC, new norms establishing that the variable component of PHC financing would be based on population coverage, and the possibility of hiring professionals through contracts, instead as civil servants (Couttolenc and Dmytraczenko, 2013; Gragnolati et al., 2013). The ESF has high levels of coverage, but its expansion has reached a plateau in the last years (Couttolenc and Dmytraczenko, 2013). Data from the Primary Health Care Department [Departamento de Atenção Básica- DAB] indicated that, in September 2018, there were 42,960 ESF teams implemented in Brazil. The estimation of population covered used to be provided by DAB, and was calculated as one ESF team per 3,450 people. By this calculation, it was estimated that 71.90% of the Brazilian population was covered by ESF in September 2018. The highest coverage was in the Northeast region (95.11%) and the lowest was in the Southeast region (57.48%).

The USF were introduced in Portugal in 2006. The expansion of the USF was stimulated by the autonomy for professionals to voluntarily apply and by the introduction of new management model, institution of clinical management and reorganization of support services (Biscaia and Heleno, 2017; Rocha and Sá, 2011). By the end of 2007 there were 104 USF established in Portugal (Observatorio Portugues de Sistemas de Saúde, 2008). The number of USF has been increasing steadily since their introduction (Organization for Economic Co-operation and Development, 2015). There were 505 active USF in July 2018, according to data from the SNS. Out of these, 270 were Model A and 235 were Model B (Peralta-Santos et al., 2018). Nearly half of the USF were in the North region and another 31% of them were in the Lisbon and Tagus Valley region. There were also 380 UCSP providing PHC through the traditional approach. By 2016, more than half of the Portuguese population was covered by USF (Biscaia and Heleno, 2017). The Portuguese Observatory of Health Systems (Peralta-Santos et al., 2018) pointed that, if the number of USF increases at a pace of 25 new centers per year, only in 2030 that the estimated quantity needed of USF would be reached (around 820 units).

4.4 Satisfaction of population and professionals

In Brazil, the satisfaction of users with the PHC delivery system overall is high (Ministério da Saúde do Brasil, 2015). This satisfaction is even higher among users of the ESF (Gragnolati et al., 2013; Macinko and Lima-Costa, 2012b). There is evidence of a positive association between household enrolment in the ESF with having a usual source of care and this source being the PHC, and a negative association with reporting emergency and urgent care as the usual sources (Dourado et al., 2016). Although there was found no national survey of satisfaction of ESF professionals, some local studies in Brazil found that the positive aspects of the ESF reported by professionals are related to team work and relationship with the users (Lima et al., 2014; Martins et al., 2015; Perez et al., 2013; Soratto et al., 2018).

In Portugal, early studies found that professionals of the USF had good satisfaction levels overall (Ferreira and Antunes, 2009a; Pisco, 2011; Souza et al., 2013), with the teamwork and work conditions at the units identified as improvements resulting from the implementation of USF (Carrapiço et al., 2017; Pisco, 2011; Souza et al., 2013). A report by the national association of USF lists sources of dissatisfaction among professionals, which include inadequate clinical and informatics equipment, information systems and institutional incentives (Biscaia et al., 2018). There were high levels of satisfaction reported among USF users (Ferreira and Antunes, 2009b; Mendes et al., 2013; Pisco, 2011; Rocha and Sá, 2011), which is aligned to one of the proposed objectives of the PHC reform.

5. CHALLENGES FACED BY PHC

5.1 Unequal PHC access

Brazil and Portugal have unequal coverage distribution of USF and of human resources across the countries. In Portugal, the existing USF are concentrated along the coastal area and in the bigger cities, where there is higher population density (Miguel and Sá, 2010; Organization for Economic Co-operation and Development, 2015). Because USF in Portugal are self-formed, some reasons found for the lower number of USF units in some regions are due to human resources (insufficient professionals, professionals near age of retirement), as well as economic contexts (Miguel and Sá, 2010). Some of the regions that have faced low coverage of physicians before 2005; such as Alentejo and Algarve (Martins et al., 2003), continued with worst coverage after the PHC reform (Simões et al., 2017).

In Brazil, the highest percentage of families registered at ESF units is in the rural areas (Malta et al., 2016), and there are difficulties in promoting access and consolidation of a proactive model of PHC in large urban centers (Sá et al., 2016). The complex dynamics of urban regions can hinder the capacity of municipal managers in planning and executing the ESF policies effectively (Viana et al., 2008). The ESF implementation differentials between regions can be explained by the diversity in political, organizational and institutional contexts (Malta et al., 2016; Medina and Hartz, 2009), as well as a broader choice of health providers by the population in bigger cities, including private health insurance (Couttolenc and Dmytraczenko, 2013).

In Brazil, improvements in access, health outcomes and economic impact were more significant for the poorer population, given the focus the PHC reform had for these groups and regions. It is possible to argue that, while seeking to improve health care for the less privileged segment of the Brazilian population, there were created social variations in access and use of PHC. In Portugal, the better understanding of how the health system works determines how well the user can navigate through it (Teixeira, 2013). This knowledge of the health systems can be derived from either the education or socioeconomic level of the population. Therefore, both countries face geographic and social inequities.

Brazil and Portugal have developed strategies and policies to address the insufficiency and unequal distribution of human resources. In Portugal, physicians with a specialty in general and family medicine compose most of the primary care workforce. In fact, Portugal has one of the highest shares of generalists among all doctors among OECD countries (Organization for Economic Co-operation and Development, 2015). However, a high number of those professionals are approaching retirement. In addition, there are indications that the specialty in general and family medicine in Portugal was historically less attractive to recent graduates then other specialties (Gaspar, 2006). To address the lack of those professionals, the Portuguese government has increased the number of available places and established a minimal threshold of vacancies for the general and family medicine specialty (Oliveira et al., 2017; Organization for Economic Co-operation and Development, 2015). Between 2006 and 2015, the number of residency places almost doubled, reaching 1,569 in 2015 (Oliveira et al., 2017). Other measure taken was the recruitment of foreigner doctors through bilateral agreements, although there has been no assessment of the efficiency or effectiveness of such measure (Oliveira et al., 2017). Other measure was to provide incentives for geographic mobility of physicians to needed areas, although it was not enough to reach the needed PHC coverage (Soranz et al., 2017). Besides the adoption of these strategies, no policy on human resources for health has been formulated yet (Oliveira et al., 2017).

Furthermore, Portugal has a low ratio of nurses to physicians when compared to other OECD countries. Although the country trains these professionals, a large number of them emigrate, which has been related to low wages and low recruitment of nurses in the Portuguese health system (Organization for Economic Co-operation and Development, 2015). Although USF are described as having multiprofessional teams, these are composed only by physicians, nurses and administrative staff. This situation could be better addressed if URAP were developed in integration with USF.

In Brazil, different wage structures, unstable contract arrangements and shortage of physicians have been associated to difficulties attracting and fixing professionals in teams of ESF, mostly in smaller cities (Girardi et al., 2010; Malta et al., 2016). There was been an expansion in the formation of family physicians in the last years (Norman, 2014). However, unlike Portugal, currently there is no career plan for this category of physicians, which can render the specialty less attractive. Changes were introduced in the contracting of professionals to overcome such obstacles. Although the

number of temporary labor contracts decreased, the situation remains (Couttolenc and Dmytraczenko, 2013; Paim et al., 2011).

Another measure taken was the adoption of the More Doctors program [Programa Mais Médicos-PMM] in 2013, in which physicians have been placed in areas with shortage of professionals. To date, the program distributed 19,000 physicians imported from other countries, especially Cuba, and almost 5,000 Brazilian physicians (Rech et al., 2018). Some studies point out that this program has been associated to better health outcomes due to PHC, especially in deprived areas (Girardi et al., 2016; Rech et al., 2018; Santos et al., 2017). Despite the increase in number of physicians, there are still problems with poor governance on the municipality level and lack of infrastructure that hinder the potential of the program (Girardi et al., 2016; Rech et al., 2018). In addition, at the end of 2018, the government of Cuba withdrawal from the Cooperation Agreement responsible for the PMM and called its professionals back. The Cuban Ministry of Public Health based its decision on statements by the Brazilian President-elect in 2018, who had made "direct, derogatory and threatening references to the presence of our physicians, stated and reiterated that it will modify the terms and conditions of the PMM" (Alves, 2019).

5.2 Organizational obstacles

Despite restructuring their health systems with PHC as a gatekeeper, both Brazil and Portugal have a traditional hospital-centricity on their health systems (Couttolenc and Dmytraczenko, 2013; World Health Organization Regional Office for Europe, 2016). Emergency departments and hospitals are commonly used by citizens due to perception of greater quality of care and timely response at hospitals (Organization for Economic Co-operation and Development, 2015; Simões et al., 2017). The misuse and excessive demand on emergency departments leads to high costs for the health system, as this level of care is more expensive than PHC. In Brazil, the PHC reform has helped to reduce the centricity of hospitals in the health system, although half of government spending is allocated to hospital services (Gragnolati et al., 2013). Nevertheless, government spending has been reallocated towards PHC (Couttolenc and Dmytraczenko, 2013; Gragnolati et al., 2013).

In 2016, the health expenditure as a share of GDP in Brazil was 6.2%, but the public share corresponded for less than half of this amount (Organization for Economic Co-operation and Development, 2017). Municipalities often have troubles with sustaining the ESF financially, due to municipal budget limitations (Mendes and Marques, 2014). This situation is even more problematic for smaller and less developed municipalities, that depend greatly on the federative transferences which may not be enough (Mendes and Marques, 2014; Portela and Ribeiro, 2011). In Brazil, the strengthening of primary care services and its sustainability is compromised by the lack of financial resources. Overall, the Brazilian health system in general faces major financials challenges (Macinko and Harris, 2015) that may be aggravated by fiscal adjustment measures implemented in the last two years. At the end of 2017, the Ministry of Health relaxed programmatic conditions which leads to the fragmentation of the public system and indirectly stimulates private arrangements (Noronha et al., 2018). In addition, the former country's Government introduced one of the harshest set of austerity measures in modern history. The constitutional amendment passed in December 2016, called PEC-55, freezes the federal budget, including health spending, at its 2016 level for 20 years (Doniec et al., 2018). Secondly, the Government plans to introduce commercial health plans [Planos Populares], meant to replace functions previously performed, free of charge, by SUS. Commercial plans offer a narrower scope of services than the minimum offered by SUS and are subject to less regulatory scrutiny, which generally results in poor service quality and high out-of-pocket costs (Doniec et al., 2018). This constitutional amendment that freezes the budget for 20 years; with severe projected consequences for the expansion and improvement of health services in the future (Malta et al., 2018; Santos, 2018).

In Portugal, the total health expenditure represented 8.9% of the country's GDP in 2016, which is similar to the mean of the OECD countries (Organization for Economic Co-operation and Development, 2017). Health spending peaked at 10.8% in 2010, but decreased the following years after the economic recession and the austerity measures required by the Economic and Financial Adjustment Programme in 2011 (Maresso et al., 2015; Simões et al., 2017). The austerity measures required the reduction in public expenditure for health. In 2017, public expenditure corresponded to 66% of the total health expenditure, which was among the lowest in the European Union (Simões et al., 2017). On a positive reference, the Memorandum of Understanding for the economic crisis recommended the strengthening of primary care services through the increase in the number of USF

with performance-related payments (Portugal, 2011). This recommendation expected reduction in costs and more effective provision.

In Portugal, there is allocation of financial resources to support the pay-for-performance model institutionalized by the PHC reform. One study compared variable compensation mechanisms based on performance for PHC in Lisbon, Portugal and Curitiba and Rio de Janeiro, Brazil (Neto et al., 2016). While the variable compensation in Lisbon could reach 40% of the base wage, it the Brazilian cities it only reached 10%. There is evidence for the effectiveness of the pay-for-performance scheme in PHC in Portugal to improve quality of care and to reduce expenditures (Perelman and Lourenço, 2015). These conclusions were based in the analysis of the evolution of performance indicators.

The use of specific performance indicators in the contractualization process in Portugal allows the monitoring of outcomes related to access, quality, coordination and efficiency of the PHC. However, the rigidity of the contractualization process can lead to a standardization of health activities and shift the focus of care to a biomedical perspective (Raposo, 2015). The contractualization process based on specific indicators can prompt a lack on the people-centeredness dimension and less flexibility, which are highly required in PHC. Some of these challenges were addressed by the introduction of a Global Performance Index [Índice de Desempenho Global- IDG] in 2014 and its modifications introduced in 2017 (Administração Central do Serviço de Saúde, 2017). There was an attempt to increase the sampling of dimensions considered to assess overall performance (Pestana et al., 2019).

In Brazil, the introduction of health agents in the ESF seeks to guarantee a better understanding of the needs of users beyond the clinical aspects, bringing the health care closer to the community. The managing of the ESF in Brazil is responsibility of the municipalities, but the management capabilities on this local level are often weak (Paim et al., 2011). The governance in the municipal level also leads to large variations in the capacity and quality of the ESF teams; including in physical and human resources and institutional support (Macinko and Harris, 2015). In Portugal, on the other hand, the management and financing of health services are responsibility of the Ministry of Health and the ARS. Decentralization is a keyword of the Portuguese SNS framework, as in other European countries (Simões et al., 2017). But in practice, responsibilities for planning and financing have remained centralized. The ACES need adequate management autonomy and accountability. The decentralization is one of the main pillars of the PHC reform that is yet to be fully achieved (Peralta-Santos et al., 2018). It is argued that decentralization is effective to improve health services delivery, to better allocate resources, to reduce health inequities and to involve the community (Simões et al., 2017).

Brazil and Portugal have co-existence of traditional PHC centers and Family Health Units, which indicates distinct levels of quality. In Portugal, distinct levels of quality are also results of different models of health care delivery, due to the voluntary aspect and autonomy promoted by the PHC reform. There is room to improve integration of USF with other PHC units, as well as vertical integration (Rocha and Sá, 2011; Simões et al., 2017). The challenge for Portugal is how to develop such integration with different official and unofficial models of care. Some measures taken aiming at improved integration include the creation of Local Health Units [Unidade Local de Saúde- ULS] in 1999 and The National Network for Long-term Care [Rede Nacional de Cuidados Continuados Integrados- RNCCI] in 2006. ULS are groups of care providers that integrate hospitals and PHC units to improve multi-disciplinary cooperation. The RNCCI connects hospitals, ACES, social security services, municipalities and other institutions to provide long-term care, social support and palliative care.

In Brazil, limitations in the information system and patient records have been one of the sources for the lack of integration between PHC and other levels or care (Couttolenc and Dmytraczenko, 2013). Integration of care still represents an important weakness of the SUS (Couttolenc and Dmytraczenko, 2013). Some measures have been taken to address such challenges. The Healthcare Network Policy was launched in 2010, to establish strong integrated health care networks in Brazil. The Ministry of Health has also implemented the e-SUS AB, which is the new Brazilian PHC information system. It has the purpose of reorganizing data of PHC and is integrated with e-SUS of ambulatory and hospital care.

Portugal has an extensive information infrastructure that allows the monitoring of the health system performance and public policies. The introduction Primary Health Care Identity Card [Bilhete de Identidade dos Cuidados de Saúde Primários – BI-CSP] and the IDG allows for the monitoring and comparison of USF performance. However, there are obstacles to access relevant and articulated information, since not all data sources are effectively integrated (Simões et al., 2017). Few studies

have analyzed the association of health care interventions with positive health outcomes; to establish evidence on this is still a challenge for health policy-makers (Simões et al., 2017). Most of the results collected on positive outcomes of the PHC reform come from official reports that can be biased. In addition, the policy evaluation process of health services in general in Portugal is not systematic, as there are usually no evaluation plans or ex-post assessments (Simões et al., 2017). Longitudinal studies from the periods before and after the reform are necessary to really understand the gains derived from the changes in PHC in the last years.

6. Final remarks

In Brazil and Portugal, the needs of the population and the positive results of innovative experimental projects on PHC delivery led to the reforms adopted in both countries. The main organization characteristic is the establishment of the Family Health Units, with multiprofessional teams providing community-oriented care in close contact with the population, integrated with other functional units and with payment schemes that rewards performance. Countries that structure their health systems around PHC have presented better results in different dimensions, and Brazil and Portugal have presented some advances in access, health outcomes, economic impact and satisfaction of the population with PHC.

Brazil and Portugal have a historic relationship that reflects on similarities in language and culture. Both countries also face similar challenges in PHC services delivery, namely inequities in access and quality, lack of integration in the health system and suboptimal organizational characteristics, to name a few. Brazil and Portugal have introduced public policies and strategies to overcome some challenges the PHC face. Improvements in health and well-being provided by PHC and health systems in Brazil and Portugal demand political commitment and the focus on bringing positive results to the population, and these should be in the future agenda for both countries to move forward.

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The use of pay-for-performance in primary care: the UK experience, the lessons for Portugal (and the UK)

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ABSTRACT

Pay-for-performance (P4P) has been introduced to finance primary healthcare (PHC) in Portugal in 2006, and in the UK in 2004, as means to incentivize a greater quality of care. Although the P4P has been increasingly used in several countries, there is still much to know on its design and implementation, and on the link between design, implementation, and program effectiveness.

The contextual similarities and the timing of implementation of the UK and Portuguese experiences provide an interesting comparison to evaluate the Portuguese case, for which little evidence exists. We first developed a taxonomy to characterize both P4P programs, which allowed then to examine their similarities and differences. Then, we performed an extensive literature review of the evidence about the impact of the QOF; finally, we discussed the lessons from the UK experience and its relevance for the Portuguese case.

The taxonomy of the P4P payment model included five dimensions, namely, (1) The rationale of the reform, from the health system perspective; (2) The target population, namely, the providers and clinical areas; (3) The scope and design of the model, including the performance dimensions and indicators, and how financial incentives were allocated; (4) The reporting, assessment and verification of performance; and (5) The implementation process. UK and Portuguese programs were very similar in most aspects of the five dimensions.

The revision of the literature on the UK program's consequences revealed a modest and short-term effectiveness, positive spillovers to non-targeted areas and indicators, a reduction in inequality, and no evidence of reduction in GPs' intrinsic motivation. Our main recommendations for Portugal included the regular revision of indicators, the public discussion about their choice, the need to evaluate the relative performance, the inclusion of outcome-related and inequality-related indicators, and the public report of performance.

Keywords: Pay-for-performance, UK, Portugal, effectiveness, equity.
JEL classification: I18.

1. INTRODUCTION

The idea of Pay-for-Performance (P4P) to finance health care providers is well established in the literature as well in policy documents; a set of indicators is defined, to which quantitative or non-

quantitative targets are associated. The providers' income will then depend totally or partly on them achieving the targets. Up to 2012, P4P had been implemented in primary care in 18 OECD countries (Cashin, Chi, Smith, Borowitz, & Thomson), which indicates the popularity of this new payment scheme. Nevertheless, there is still much to know on the design and implementation of P4P programs, and on the consequences of these strategies on its effectiveness.

In Portugal, the P4P was introduced in 2006 in primary healthcare (PHC), using team-based incentives, and reinforced in 2009 through individual incentives (Ministério da Saúde, 2008). So far, however, and to our best knowledge, limited evaluations of the program have been performed (Fialho, Oliveira, & Sá, 2011; Perelman, Lourenço, Russo, & Miraldo, 2016). This limited evidence derives mainly from the absence of a counterfactual for comparisons, because performance indicators were not collected before the reform. Also, the voluntary character of the P4P scheme likely produced biased results since participant GPs were probably those more susceptible to reach the incentivized targets.

The Portuguese P4P program was introduced right after the introduction of the program in the UK, the so-called Quality and Outcome Framework (QOF), implemented in 2004, which was the first and possibly most well-known experience of this type (Gravelle, Sutton, & Ma, 2010). These P4P strategies were designed and implemented in rather similar ways in both National Health Services. In Portugal, the reform was introduced in a system where general practitioners (GPs) were civil servants, usually paid by fixed wages defined by national table, and enjoying little autonomy. By contrast, in the UK, GPs have been individual contractors with a large autonomy, with the traditional contract including a mix of fee-for-service, capitation, and salary. However, an alternative contract also existed before the reform, mainly based on a salary, with variation according to local circumstances (the so-called "Personal Medical Services") (Smith & York, 2004). That is, the UK QOF was introduced in a context where autonomy and incentives already existed, but without explicit quality-related rewards or penalties, creating a concern of low quality, in particular in disadvantaged areas (Doran et al., 2006). Since its implementation, the QOF has been subject to several performance evaluations, the first dating back to 2006 (Doran et al., 2006).

The contextual similarities and the timing of implementation of both experiences provide an interesting comparison to evaluate the Portuguese case. In this paper, we first develop a taxonomy to characterize the P4P programs, which allow then to examine the similarities and differences of reforms. Then, we perform an extensive literature review of the evidence about the impact of the QOF; finally, we discuss the lessons from the UK experience and its relevance for the Portuguese case.

2. METHODS

We first developed a taxonomy to characterize the policy and define the barriers and enablers of its implementation and performance. Second, we performed an extensive review of the literature on the impact of P4P in the UK. In this survey, we primarily focused the effectiveness of the P4P to enhance the PHCs' performance. We then analyzed the evidence on other unintended effects of P4P, namely intrinsic motivation and equity. Third, for each dimension of the P4P impact, we drew our own recommendations and reviewed the recommendations quoted in the literature, as a means to define the lessons that Portugal could learn from the UK experience. Lessons drawing and learning from abroad has been extensively used as a method in contemporary policy-making in what is today called policy-transfer, that is, the study of similar experiences for the development of policies, institutions and administrative arrangements in another political setting (Dolowitz and Marsh 2000; Temido and Dussault 2015).

3.RESULTS

3.1. A taxonomy of P4P programs in PHC

In order to organize the comparison of P4P schemes, we developed a taxonomy of the P4P payment model, around five dimensions:

(1) The rationale of the reform, from the health system perspective;

(2) The target population, namely, the providers and clinical areas;

(3) The scope and design of the model, including the performance dimensions and indicators, and how financial incentives were allocated;

(4) The reporting, assessment and verification of performance; and

(5) The implementation process.

The comparison between the countries' schemes is presented in Table 1.

3.2. Application of the taxonomy to the Portuguese and UK schemes

Rationale of the reform

The implementation of both systems responded to similar difficulties. Essentially, the traditional salary payment was believed to hardly motivate physicians, leading to low patients' and physicians' satisfaction, reduced access, low productivity and efficiency, and poorly rewarded quality (Pisco, 2011). The P4P was viewed in both cases as a means to revalue and reinforce the primary care sector.

Participants and target population

In both countries, the participation was voluntary and open to all practices. Though, in Portugal, the PCP had to apply to the status of Family Heath Practice (FHP), entitling to P4P, and could be selected or not; in the UK, all volunteers were included in the P4P. In case of rejection, the Portuguese PCPs remained in the traditional scheme with fixed salaries, but their performance was assessed and subject to public release. Additionally, the FHPs were further split into A-type, which only received team-based incentives, and B-type, which also received individual-based incentives. Again, the B-status was attributed to volunteers provided they fulfilled a series of criteria. Given, the selection procedure, only 46% of PCPs were covered by P4P in Portugal, while the coverage was above 99% in the UK (99.6%) (Campbell, Reeves, Kontopantelis, Sibbald, & Roland, 2009)).

Scope and design

In the UK, the incentives were added to practices' core funding, but rewards were distributed to health professionals to complement incomes. In Portugal, at B-type FHPs, individual incentives were attributed to all professionals, to complement salaries. The A-type FHPs only received team-based incentives, which could solely be used for collective actions.

In both countries, the incentives were paid proportionally to the achievement of given targets, provided a minimum threshold was reached. In both cases, a system of scoring was in place. Exceeding the target did not entitle to higher rewards. All PCPs were entitled to rewards regardless of their relative position. Only the yearly absolute values were evaluated, and not the level of improvement across years.

The dimensions covered were very similar but the number of indicators was much lower in Portugal (12 national indicators) as compared to the UK (146 indicators in 2004)). The indicators, targets, thresholds and formulas to calculate incentives were publicly available in both countries and of easy access.

Reporting, assessment, and verification

In both countries, the reporting of data was made through an electronic platform, and results publicly displayed. A major difference between the two programs is that the payment was adjusted for the practice size and disease prevalence in the UK, with the additional possibility of exception reporting. The exception reporting consists in the possibility for the P4P to exclude individual patients from the measurement of performance, for example the patients who do not attend the consultations. By contrast, there is no risk-adjustment in Portugal, neither the possibility to report exceptions.

Policy formulation and implementation

Finally, the political process has been very different in both countries. In Portugal, there was a large consultation when the P4P was launched, but the yearly negotiation of indicators and targets only involved the national federation of FHPs. By contrast, there was a permanent and formal consultation of stakeholders in the UK, involving many organizations of clinicians, patients, academics, NHS managers, pharmacists, etc.

3.3. Impact on quality of care

Rationale and evidence

A quite large literature has examined the impact of P4P on the quality of care in the UK. Campbell et al. (2009) observed modest improvements in the quality of management of asthma and diabetes, but not heart disease, although changes were only observed in short run. Modest improvements were confirmed for diabetic patients (Vaghela, Ashworth, Schofield, & Gulliford, 2009). More important rises in quality were observed for patients with chronic heart disease (McGovern et al., 2008), but for the very early implementation period. More recently, improvements were noticed for patients suffering from depression (Unützer et al., 2012). Other studies did not find any improvement at all, in quality for patients suffering from hypertension (Serumaga et al., 2011). Overall, Gillam, Siriwardena, and Steel (2012) performed a large review of the literature which allowed them conclude that improvements in quality of care for chronic disease were modest, and mostly limited to the first year of implementation.

Recently, researchers in the UK evaluated the impact of the QOF on mortality, through a difference-in-difference analysis comparing changes in pre- and post-QOF mortality, from chronic disorders, between the UK and comparable countries (A. M. Ryan, Krinsky, Kontopantelis, & Doran, 2016). The study demonstrated the absence of any significant changes in long-term (1994-2010) mortality related to the P4P program.

One of the explanation for this last finding is the “multitasking” effects. This effect is related to some clinical dimensions not being included as indicators; consequently, GPs may overemphasize the contracted activities to the detriment of those that are excluded. Though, more positive consequences may occur because the GPs’ investments in quality spillover to all areas of practice. This may be the case if those investments include e.g. acquiring new equipment, hiring additional staff, improve the management and administration, or attend regularly training sessions.

Campbell et al. (2009) observed for asthma and heart disease that quality scores dropped for non-incentivized indicators whereas they increased for incentivized ones. The study by Steel, Maisey, Clark, Fleetcroft, and Howe (2007) observed significant improvements for the indicators not subject to incentives but related to targeted diseases (asthma and hypertension); by contrast, they did not find any improvement for indicators related to not-incentivized conditions (depression and osteoarthritis). The study by Sutton, Elder, Guthrie, and Watt (2010) observed quality improved for all indicators; as expected though, the largest gains were observed for indicators with financial incentives, followed by non-incentivized indicators in incentivized conditions (such as alcoholism and body mass index), and finally followed by indicators in untargeted conditions.

The review by Gillam et al. (2012) identified other aspects of quality, more related to the system’s responsiveness, that were also assessed though less analyzed. In particular, the patients did not report significant changes in their experience, measured in terms of communication, coordination and overall satisfaction; by contrast, the continuity of care worsened, measured through a lower frequency of consultation and a more biomedical type of care.

Policy implications

Several causes have been put forward to explain the limited impact of P4P on performance (see (Campbell et al., 2009)). First it was argued that once targets were achieved, additional efforts would be useless because there were no additional incentives. Second, subsequent gains may have been more difficult to achieve, requiring e.g. much higher investments and a stronger reorganization. Possibly, exceeding targets may have been unrealistic from a clinical viewpoint. The absence of significant changes in mortality was a major source of concern. Beyond the arguments presented here-above, the authors mentioned that indicators might have improved solely due to better reporting or gaming (Gravelle et al., 2010), or that indicators might have been inadequately designed, failing to incorporate the outcomes that really matter (A. M. Ryan et al., 2016).

The first recommendation, mentioned by Van Herck et al. (2010), is that indicators must be realistic but chosen where there is room for improvement, and targets defined accordingly. Fleetcroft et al. (2010) alternatively suggest adding new indicators and retiring older ones, and revising targets regularly. A study showed that the removal of indicators was not problematic, with the maintenance of performance in a stable level (Kontopantelis et al., 2014).

Second, other schemes could be designed that maintain the relevance of targets across time, such as a relative performance evaluation, where the top performers are rewarded even if they are below (or above) the normative threshold. The relative incentives would also have the advantage of permitting a better budget control than absolute ones.

Third, the good results about non-incentivized indicators, in the UK, might relate to the wide range of indicators, covering various diseases; also, the limited financial incentives, up to 25% of income and further reduced to 15% in 2013, which might have avoided GPs neglecting the non-rewarded areas (Roland & Olesen, 2016).

Finally, the choice of indicators is crucial, and we may question whether indicators related to process might have failed to incentivize the results that really matter for the patients, i.e., quality of life and life expectancy.

3.4. Impact on equity

Rationale and evidence

It is often claimed that P4P schemes can have harmful equity implications. Physicians could be tempted to cream skim or avoid patients that are more likely to reduce their performance (A. M. Ryan, 2010). A more relevant threat is that if the P4P scheme does not account for exogenous constraints that might affect performance. More deprived primary care practices may face financial barriers to invest in quality, for example through implementing information systems, providing training to professionals, and developing the organizational system to improve quality (Casalino et al., 2007). The patients' characteristics may also influence the setting's performance (Casalino et al., 2007). The literature largely indicates that poorer and less educated patients are less likely to consult physicians for prevention purposes and to perform screening procedures (Lorant, Boland, Humblet, & Deliege, 2002), and have a worse adherence to treatment and self-management of disease (Goldman & Smith, 2002). If patients fail to show up at consultations, if they are less likely to adhere to treatment recommendations, or if they face greater barriers to adopt lifestyle changes, the indicators will naturally be worse, unfairly signaling a bad performance.

The preliminary study by Doran et al. (2006) demonstrated a signification association between low performance and the proportion of the population in the area living in income-deprived households. Over the same period, McLean, Sutton, and Guthrie (2006) also observed a relationship between lower quality and higher deprivation for complex process measures. A similar result was obtained for the sub-sample of diabetic patients, showing a worse glycemic control in deprived areas with less organized services (Gulliford, Ashworth, Robotham, & Mohiddin, 2007). This was also the case for coronary heart disease indicators, which were less recorded for more deprived patients (McGovern et al., 2008), and for quality indicators for patients with stroke, which were more recorded among most affluent patients (Simpson, Hannaford, Lefevre, & Williams, 2006). For cardiovascular disease indicators, Saxena, Car, Eldred, Soljak, and Majeed (2007) also measured a higher achievement in more affluent areas for indicators requiring referral for further investigation. The presence of inequalities at the starting of the program was also noticed by Dixon, Khachatryan, and Tian (2012).

Ashworth, Medina, and Morgan (2008) confirmed the significant gap between the most and the least deprived areas in the first year following the reform, focusing on blood pressure monitoring and control. However, in a follow-up study the same authors found conflicting evidence after three years, with the near disappearance of the gap. The strong narrowing of the gap was confirmed Doran, Fullwood, Kontopantelis, and Reeves (2008), who observed a greater increase in target achievement in practices situated in the most deprived areas. Ashworth, Lloyd, Smith, Wagner, and Rowlands (2007) also showed a higher prescription of statins in practices serving more deprived populations, associated to the better control of cholesterol included in the QOF. In a systematic literature review, Alshamsan, Majeed, Ashworth, Car, and Millett (2010) conclude there was a narrowing of disparities in chronic disease management between affluent and deprived areas, though it was unclear whether this trend could be fully attributed to the QOF.

Policy implications

Most studies show important disparities in performance between practices situated in affluent and deprived areas, but these disparities seem to be reduced after some years of P4P functioning. This result is unexpected but seems to indicate that the distance from targets is an additional motivation. The possibility, in the UK, to exclude non-compliant patients from targets might have contributed to this favorable finding; the absence of this possibility, and of any adjustment mechanism, should be a matter of concern in Portugal, also in a context where a large share of PCPs do not receive incentives.

In order to favor equity, some authors suggest to reward practices for the reduction of disparities. Alshamsan et al. (2010) additionally proposes to include indicators that are particularly relevant for the health of minority or underprivileged groups. The stratification of P4P targets would be a possible alternative, although much more complex. This would consist in specifying targets according to groups, e.g., different targets for ethnic minorities, or for deprived areas (Casalino et al., 2007). As noticed by Casalino et al. (2007), the stratification creates a positive incentive to direct activities towards certain groups, and alerts physicians about disparities. However, the stratification also complicates the data collection process, and may reduce physicians' motivation to perform high-quality care for minority patients for whom incentives are more generously provided.

3.5. Intrinsic motivation

Rationale and evidence

The possible adverse effect on intrinsic motivation is probably the most worrisome on a long-term perspective, but unfortunately also the one that is harder to assess. The intrinsic motivation hypothesis postulates that physicians have an intrinsic motivation to provide high-quality treatment to their patients, and an intrinsic desire to perform, as best as possible, their activity. As formulated by Prendergast (1999), physicians "have pride in their work and enjoy carrying out required tasks". It is commonly argued that a set of performance indicators imposed by regulators through P4P schemes can crowd out intrinsic motivation (McDonald, Harrison, Checkland, Campbell, & Roland, 2007). This is a matter of concern once targets have been reached given that external incentives are attenuated. In other words, the theory of extrinsic motivation argues that P4P only motivates physicians in the short term, through financial incentives, without deeply influencing the way they carry out their tasks (R. M. Ryan & Deci, 2000)

Testing the hypothesis generated by this theory is difficult given the lack of a plausible counterfactual, so that it has essentially been tested through experiments (Deci, Koestner, & Ryan, 1999). In what regards QOF, an ethnographic analysis was performed in the UK interviewing 12 physicians, 9 nurses, 4 healthcare assistants and 4 administrative staff, which consisted of observing practices over a five month period after the introduction of P4P (McDonald et al., 2007). Despite changes in practice, most doctors did not question the targets and their implications for their clinical autonomy. The support to the program was high, including the close monitoring and the surveillance of consultations, which was viewed as a help to achieve high quality clinical care. The same study observed that the higher payment, the lower job pressure, and the quality gains compensated the loss in professional autonomy. These results led the authors to conclude that the program did not damage the intrinsic motivation of the GPs.

Policy implications

The need to negotiate targets with representatives of the profession is highlighted in several publications (Peckham & Wallace, 2010), as a means to align incentives and avoid the decrease in internal motivation. The general practitioners will keep their intrinsic motivation if indicators and targets correspond to their views of good practice, and if they recognize that templates and reports represent a valuable help to fulfill their tasks. Additionally, generous payments, participation in negotiations, and support in the achievement of high performance will also provide a sense of recognition favorable to motivation.

However, alternative incentives to performance exist that do not involve direct financial rewards, which have proven relatively successful. In particular, the public release of performance data is a mechanism for improving the quality of care, which additionally allows for greater transparency and accountability (Fung, Lim, Mattke, Damberg, & Shekelle, 2008), and has proven to be successful Fung et al. (2008). Importantly for our purpose, Kolstad (2013) demonstrates, using data from US surgeons, that the public report influences much more the intrinsic motivation than the external motivation related to the profits of attracting more patients. This public report, which already exists

in both the UK and Portugal, should thus be pursued and given the highest visibility, even preferentially to an increase in financing rewards.

4. Discussion

Several conclusions can be drawn from the QOF experience in the UK, which can help analyze the Portuguese current P4P experience. First, the P4P in the UK did generate some improvements in the quality of primary care, but such benefits were modest, essentially obtained immediately after the P4P implementation, and unrelated to long-term mortality gains. The UK experience suggests that, in the way it was implemented, one cannot expect large and sustained health gains from P4P in primary care. Second, there is substantial evidence that areas that were not incentivized did not suffer from the reform, and even benefitted from improvements in some cases, suggesting the presence of positive spillovers. Third, in the UK case the initial disparities between practices located in affluent and deprived areas diminished substantially overtime. That may be interpreted as if the QOF had encouraged those practices that were well below the target to catch up. Finally, the physician satisfaction was not altered by the QOF, which did not seem neither to undermine the physicians' internal motivation.

Taking into account the substantial contextual differences, the lessons to be learnt from the UK P$P experience for the Portuguese program can be summarized as follows: (i) how can we ensure long-terms improvements?; (ii) how can we guarantee that P4P does not harm equity, and promotes the reduction of disparities?; (iii) how can we maintain the physicians' internal motivation? Based on the short review of the literature, we summarize some suggestions that can be useful in the UK and Portuguese context:

- Indicators and targets need to be revised regularly to keep incentives alive and avoid an excessive centering of specific dimensions of care;
- Indicators must be realistic, negotiated with professionals, emphasize the public health priorities, and be defined to let room for improvement;
- Indicators should refer not only to processes but also to outcomes that are valuable for the patients, i.e., quality of life and mortality;
- The performance must be evaluated in absolute but also relative terms, possibly including penalties to low performers in addition to rewards to high performers;
- The reduction of inequalities should be incentivized, such as the inclusion of indicators for diseases that are more prevalent among underprivileged patients;
- Exclusion reporting has possibly helped avoid widening inequalities but is associated to gaming, hence this strategies should be implemented with strong monitoring;
- Incentives should be large enough to be effective and ensure the physicians' satisfaction, but not too high to avoid undermining the internal motivation and excess focus on targeted indicators;

Alternatives to financial rewards, such as the public report of performance, should be considered because they are less damaging for internal motivation.

The main limitation of this study relates to the sources of information. In case it was available, we used information from systematic review to discuss the consequences of the UK P4P, but this was not always the case. However, it was beyond the scope of the paper to perform systematic review, so that we relied on a narrative review, which is certainly not that comprehensive. Hence, for some specific topics, we may have missed relevant studies.

5. Conclusion

The information provided in this paper was largely obtained based on the well-known QOF in the UK primary care. Despite some differences in the political implementation, the Portuguese P4P experience was implemented in a similar context using a very similar design. Consequently, we consider that the recommendations based on the UK experience are highly relevant for Portugal, to

be considered with attention to avoid repeating possible mistakes and ensure overcoming some difficulties and barriers.

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TABLES

TABLE 1 - A COMPARATIVE OF P4P MODELS, PORTUGAL AND UK.

	PORTUGAL	UNITED KINGDOM
Rationale		
Date of initiation	2006 (Despacho Normativo nº9/2006).	1st April 2004
Policy Objectives	"The current reform is motivated by the low satisfaction level of all agents (…), the low access, the inefficiency, the bureaucratic barriers, and the lack of incentives to improve the productivity and the quality" (Pisco, 2011). The P4P was an element of a larger reform of primary care, which was essentially reflected in the creation of the so-called Family Health Unit (FHUs), which are constituted by small multi-professional teams, are committed to a care compromise, with indicators and targets, provide care to a pre-defined list of patients, enlarge their opening hours, benefit from a larger financial and organizational autonomy, and are entitled to P4P.	The new performance related pay- the Quality of Outcomes Framework (QOF)- was introduced within the new General Medical Services contract between commissioners and GPs. The new contract had several key objectives: i) promoting staff morale, improving recruitment and retention of GPs; ii) increasing capacity by incentivizing productivity and quality of care in key areas of need iii) promoting access to care by expanding the scale and scope of the supply of primary care (by expanding GPs working hours and the range of services provided)
Piloting: yes/no	No	No
Participants and target population		
Targeted Providers	All PCUs have the possibility to become FHU. In 2005, before the reform was implemented, there were 351 PCUs and 1,823 extensions of primary care units, covering the whole country.	All general practitioners/practices can voluntarily enroll in QOF rewards. Virtually all practices have enrolled in the reward scheme.
Provider Participation (voluntary/compulsory, national/regional/other)	All PCUs can apply to the FHU status entitling to P4P. They may however be selected or not, on the basis of pre-established criteria.	Participation is voluntary and an option for all practitioners at national level.
Provider enrollment (number or % of practices/GPs)	In 2013, there were 394* FHUs, covered by P4P (out of 852 PCUs and FHUs, i.e., 46%).	In 2013/14 99.2% of the 8060 GP practices participated (a total of 8000).
Population Covered (%, type)	In 2013, 46%* of the patients were registered in a FHU, covered by P4P.	As of 2013/14: 56 million registered patients covered. 56116165 total registered patients. Therefore total percentage of patients patients covered – 99.7%.
Target clinical areas	Reproductive health, children care, diabetes care, hypertension care, monitoring of smoking habits, tetanus vaccination, use of antipsychotic drugs among the elderly**.	Varies year on year.

Scope and Design		
Performance Dimensions (Structural Quality, Process Quality, Outcomes, Patient Satisfaction, Efficiency, etc)	The indicators have been evolving since 2006, but the dimensions have been stable, related to structural & process quality (e.g., the proportion of women aged 50-70 with a mammography in the last two years); outcomes (e.g., the proportion of diabetic patients with the last HgbA1c<=8%); satisfaction (e.g., the proportion of patients satisfied or very satisfied), and drugs/exams expenditures (e.g., the average invoiced drugs, per patient).	Performance dimensions include clinical and non-clinical performance. The indicators have been evolving with an increased focus on Public Health over time. The domains are: • From 2001/02-2012/13: Clinical, Organisational, Patient Experience and Additional Services (See Table 1). • From 2013/14: Clinical, Public Health, Public Health – Additional Services, Quality and Productivity, Patient Experience (See Table 1).
Performance measures: # of indicators, frequency of reporting, group/individual/team level	There are two types of incentives: team incentives (for A-type and B-type FHUs) and individual incentives (for B-type FHUs only). For the team incentives, there are 22 indicators. Regarding the individual incentives, there are 17 indicators for nurses/administrative workers, and 22 for GPs (see below).	The number of Indicators varies across dimensions and year on year. The Health and Social Care Information Centre (HSCIC) collects the data on GP achievement under QOF to be supplied to NHS England. The data is collected for payment purposes at the end of the financial year, normally between the 1st and 5th of April. The incentives are attributed once per year, on the basis of annual performance data.
Reward/Penalty: Financial (flat rate/%, capped/unrestricted)/ non-financial/mixed, share that receive rewards/compete for rewards? Frequency of reward, how can the reward be used?	The incentives consist only in rewards, without penalties, and the rewards are only financial. The team incentives are attributed to A-type FHUs and B-type FHUs on the basis of a Global Performance Indicator (GPI), which indicates the global percentage of attainment of the targets for the complete set of indicators. According to the GPI, a given percentage of a pre-defined maximum financial reward is attributed.	The incentives consist only in rewards, without penalties, and the rewards are only financial. The reward consists of a financial payment linked to a % of target met after minimum threshold is reached. Each indicator has a maximum point value that contributes to a total of 1000 achievable points. Each indicator has a minimum threshold that is an eligibility criterion for the reward. After the minimum threshold for the indicator is reached GPs accumulate points up to a maximum threshold that is a target for each indicator. Reward is based on the number of points accumulated and is paid on the top of the base payment (either salaries or capitation).
Basis for reward/penalty: absolute level, change in measure, relative ranking. Targets? Minimum threshold required? Share of top performers rewarded?	The financial rewards are attributed proportionally to a global score, which depends on the attainment of pre-defined targets. A minimum threshold is defined for this global score, below which no reward is attributed. The incentives are thus based on absolute values that are equal for all FHUs, and do not depend on relative positions or on improvements.	The financial rewards are attributed proportionally to the accumulated points above the minimum threshold up to the target threshold. A minimum threshold is defined for this global score, below which no reward is attributed. The incentives do not depend on relative positions or on improvements on previous year performance.
Certainty of the incentive	The incentives are always attributed provided the targets have been	All providers are rewarded for points accumulated above the

	reached.	minimum threshold per indicator.
Reporting , Assessment, Verification		
Assessment: who assesses? How are indicators assessed? Risk adjustment used?	The FHUs insert their activities electronically using a nationally-available platform, which allows the monitoring of performance at any point in time. The final evaluation is made once a year, so as the calculation of final scores and financial incentives. There is no risk-adjustment of scores.	When QOF was implemented, Primary Care Organizations (PCOs) were responsible for calculating the scores and assessing the performance of providers. Until July 2013 the data on individual practices' QOF achievement and reward payments was collected and analyzed by the Quality Management and Analysis System (QMAS). Other supporting information was submitted by the GP practices to the PCOs.
Data reporting and verification	The data are reported electronically on a national platform. The data are validated and analyzed by the ACSS.	
"Naming and Shamming": results publicly available?	The performance of all primary care units is calculated, including those of the PHUs, which are not entitled to P4P. Scores are publicly available in reports prepared by the ACSS.	Data on performance scores by area and GP practice as well as provider rankings according to performance are publicly available from HSCIC website (e.g. http://www.hscic.gov.uk/catalogue/PUB15751).
Policy formulation and implementation		
Provider involvement in design: yes/no	Yes. The design of the primary care reform involved by the so-called Mission for the Primary Healthcare, which involved a large participation of GPs. The indicators and targets are negotiated every three years with the GPs and the National Association of FHUs.	Within NICE, The Primary Care QOF Indicator Advisory Committee considers and prioritises previously developed potential indicators, prioritises suggestions for new clinical or public health topics and makes recommendations for indicator development, considers the outcome of piloting and consultation and makes final recommendations on proposed indicators, reviews information on the uptake of indicators in the QOF and recommends whether any should be retired, considered for changes to points and/or thresholds, or be subject to further assessment. NICE also consults with an advisory committee within which general practitioners, nurses, academics, public health consultants, NHS managers, pharmacists, social workers are represented. Finally NICE, launches wide public consultations on several issues including the development and implementation of new QOF indicators.
Embedded within the current payment system?	The P4P is independent of fixed salary for GPs, nurses and administrative workers.	The P4P supplement the existing provider reimbursement system.

Aligned with base payment objectives?	No.	Capitation payment systems incentivize the number of patients enrolled in primary care practices. Part of QOF indicators also target access to services and therefore are potentially aligned with capitation payment objectives. However QOF also targets improvements in the quality of care provided, improvement on service organization and staff morale that are areas neglected within capitation and salary based systems.
Complexity and transparency	The list of indicators is publicly available and documented on the website of the ACSS. This is also the case for the formulas to calculate the score and the financial incentives. The performance of PCUs is publicly reported. From a purely subjective viewpoint, the calculation of scores and financial incentives is relatively complex, and it is probable that individual FHUs do not have the competences to evaluate their own performance.	The list of indicators is publicly available and documented. The development and revision of indicators is made with wide consultation of different stakeholders. There is a wide range of indicators across several domains and with minimum and maximum thresholds the scheme is fairly complex.
Selective participation	Yes (see above). The PCUs that volunteer and are selected to become a FHU, entitling to P4P, are possibly those that initially performed better and expect to achieve targets easily. These units are then rewarded, possibly even increasing the gap with the units excluded from the P4P.	Enrollment in the scheme is voluntary. In 2013/14 almost 8000 GP practices. Total number of practices 8060. Therefore 99.2% practices covered.
Size in comparison to base payment	Approximately up to 30% of GP practice income.	Approximately 25% of GP practice income.
Exceptions reporting	There is no exception reporting.	Practices are allowed exception reporting under certain circumstances (for example if patients do not attend appointments they can be excluded by the provider from the performance assessment).
Existence of adequate information systems	Yes. A national web-platform is available at all PCU for the coding of activity that permit to calculate the performance.	Yes. The majority of the data is recorded and reported via national information systems.
Other	It is important to notice that the legal introduction of managerial and financial autonomy was far from effective. The Portuguese NHS is highly centralized, and the reform of the primary was unable to alter significantly this situation. Also, the economic and financial crisis contributed further limit the autonomy of PCUs, obliging them to address formal requirements to Regional Health Authorities to acquire equipment or to contract professionals, within the budgets to which they were formally entitled. These aspects of implementation may have possibly reduced the impact of the P4P on FHUs' practices.	

*These values refer to the year 2013, for which the last official data are available.

**This information refer to the national indicators for the year 2015. Other indicators referring to other clinical areas can be added at the regional level (Regional Health Administration), at the local level (PCU Groups), or at the PCU level. These additional indicators have to be selected within a list of 69 indicators referring to a larger variety of clinical areas (COPD, cancer screening, depression, registration of alcohol habits, influenza vaccination, obesity).

TABLE 2 - UK INDICATORS

Year	Domain	Areas	Total Indicators	Points
2004	Clinical	11 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	76	550
	Organisational	5 Records and information, Patient communication, Education and training, Medicines management etc.	56	184
	Patient experience	2 Patient survey and Consultation length.	4	100
	Additional services	4 Cervical screening, Child health surveillance, Maternity services and Contraceptive services	10	36
2005	Clinical	11 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	76	550
	Organisational	5 Records and Information, Patient communication, Education and training, Medicines management etc.	56	184
	Patient experience	2 Patient survey and Consultation length.	4	100
	Additional services	4 Cervical screening, Child health surveillance, Maternity services and Contraceptive services	10	36
2006	Clinical	19 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	80	655
	Organisational	5 Records and Information, Patient communication, Education and training, Medicines management etc.	43	181
	Patient experience	2 Patient survey and Consultation length.	4	108
	Additional services	4 Cervical screening, Child health surveillance, Maternity services and Contraceptive services	8	36
2007	Clinical	19 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	80	655
	Organisational	5 Records and Information, Patient	43	181

		communication, Education and training, Medicines management etc.		
	Patient experience	2 Patient survey and Consultation length.	4	108
	Additional services	4 Cervical screening, Child health surveillance, Maternity services and Contraceptive services	8	36
2008	Clinical	19 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	80	650
	Organisational	5 Records and Information, Patient communication, Education and training, Medicines management etc.	36	167.5
	Patient experience	3 Patient survey, Consultation length, and provision of appointments.	5	146.5
	Additional services	4 Cervical screening, Child health surveillance, Maternity services and Contraceptive services	8	36
2009	Clinical	20 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	86	697
	Organisational	5 Records and Information, Patient communication, Education and training, Medicines management etc.	36	167.5
	Patient experience	2 Patient experience of ease of access to GPs, Consultation length.	3	91.5
	Additional services	4 Cervical screening, Child health surveillance, Maternity services and Contraceptive services	9	44
2010	Clinical	20 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	86	697
	Organisational	5 Records and Information, Patient communication, Education and training, Medicines management etc.	36	167.5
	Patient experience	2 Patient experience of ease of access to GPs, Consultation length.	3	91.5
	Additional services	4 Cervical screening, Child health	9	44

		surveillance, Maternity services and Contraceptive services		
2011	Clinical	20 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	87	661
	Organisational	6 Records and Information, Patient communication, Education and training, Medicines management etc.	45	262
	Patient experience	1 Consultation length.	1	33
	Additional services	4 Cervical screening, Child health surveillance, Maternity services and Contraceptive services	9	44
2012	Clinical	22 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	96	669
	Organisational	6 Records and Information, Patient communication, Education and training, Medicines management etc.	42	254
	Patient experience	1 Consultation length.	1	33
	Additional services	4 Cervical screening, Child health surveillance, Maternity services and Contraceptive services	9	44
2013	Clinical	20 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	90	599
	Public health	4 Blood pressure 40+, CVD primary prevention, Obesity 16+, Smoking 15+	9	113
	Organisational domain	 e.g. medicines management	3	23
	Patient experience	1 Consultation length.	1	33
	Public health - Additional services	4 Cervical screening, Child health surveillance, Maternity services and Contraceptive services	9	44
	Quality and Productivity	1	9	100
2014	Clinical	≈20 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	≈69	≈425
	Public health	≈8	≈12	≈80

		Blood pressure 40+, CVD primary prevention, Obesity 16+, Smoking 15+		
2015	Clinical	≈19 e.g. Coronary heart disease, LVD, Stroke and TIA, Hypertension, Diabetes Mellitus etc.	≈77	--
	Public health	≈6 Blood pressure 40+, CVD primary prevention, Obesity 16+, Smoking 15+	≈12	--

Source: own construction based on NICE Quality and Outcomes Framework Achievement Data, see, e.g., https://files.digital.nhs.uk/publicationimport/pub04xxx/pub04431/qof-09-10-rep.pdf

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Healthcare policy innovation in the United States and Portugal: the case of Accountable Care Organizations

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ABSTRACT

Portugal and the United States have a very different health system. Nevertheless, there are opportunities to learn from some policy innovations in both countries. In this paper, the author explores the challenges of implementing the Accountable Care Organization (ACO) to the Portuguese Health System.

ACO are groups of providers take responsibility and coordinate for improving care, health status and healthcare efficiency of a given population. These organizations were created as a byproduct of the Affordable Care Act and aimed to strengthen the coordination of care, improve quality and reduce costs. One of the main features of the ACO is a shared savings model, where the insurance shares the savings with the provider if specific quality indicators are met.

The author argues that the ACO model would be difficult to implement in the National Health System, although for the Civil Servant Health Insurance (ADSE) could help to curb the costs, incentivize the providers to adapt to better quality standards and incorporate patient evaluation of the services provided in the overall quality assessment of the provider.

Keywords: Accountable Care Organization, Health Systems, Portugal, USA.
JEL classification: I18.

1. INTRODUCTION

In a recent event, at the University of Washington, with Donna Shalala, the former Health and Human Services secretary under the Clinton Administration (1993-2001), discussed the intricacies of Healthcare politics in the US. Donna Shalala has a senatorial pose and the conciliatory voice tone of an experienced politician and during the talk we talked about the historical roots of the Health Systems in the US, from the attempt of Theodore Roosevelt of social and health reform after the II World War (1948) to the Lyndon Johnson Medicare and Medicaid act (1964). What was truly interesting was to learn that the Clinton administration tried to pass, without success, a similar piece of legislation to what would be known later in the Obama administration as the Affordable Care Act [1].

The recent healthcare policy innovation in the United States is a good ground for a reflection on common challenges between the American and the Portuguese Health System and some innovations that can be made to ensure access, affordability, and quality of healthcare provision. To simplify this daunting task, we will use the case of the Accountable Care Organization (ACO) and some recent policy developments and how that can inform the policy in Portugal.

2. ACO IN THE UNITED STATES HEALTHCARE SYSTEM

The ACO were established in 2012 under the provision of the Affordable Care Act, although the bases begin in 2007 with an important contribution by Fisher and colleagues [2]. ACO is a generic term that describes a group of providers that are willing to take responsibility and coordinate for improving care, health status and healthcare efficiency of a given population [3] under Medicare (federal health insurance for elderly and disabled patients). The ACO can vary in size, from a small group of physicians that organize in clinics to large integrated hospitals and primary care organizations. Currently, there are more than 10.4 million beneficiaries in 561 organizations participating in the Medicare ACO.

One of the distinctive features of ACO is the shared savings where the providers are rewarded if previously specified 33 quality targets are met [4, 5]. ACO quality indicators are heavily influenced by the satisfaction of patients (25% of the quality index), this encourages ACO to innovate in the customer experience and to retain clients. The shared savings program serves two proposes, be attractive to the providers and incentivize practices that represent value to the patients while being efficient.

The initial ACO evaluation published at the NEJM demonstrated a 1.4% reduction in spending on inpatient care, a 2.1% reduction in spending on hospital outpatient care that was mostly offset by a 1.5% increase in spending on office-based outpatient care [6-8]. Another paper published in JAMA reported similar savings correlated with more parsimonious usage of clinical tests and imaging services [9]. These results are especially encouraging given the historical difficulties in curbing costs in Medicare services [10].

To disentangle and compare policy reforms between countries it is useful to compare the challenges and the drivers for policy change. The United States departed from the OECD mean of Healthcare expenditure since the '70s and is now a clear outlier [11]. Moreover, the health outcomes have been stagnating. Portugal has been increasing the Healthcare spending since the '70s and is now in the OECD mean, with significant good results regarding Health outcomes [11]. However, the attempts to align incentives from the supply-side of healthcare with the payer are a standard feature on both systems (see table 1).

3. ACO IN THE PORTUGUESE HEALTHCARE SYSTEM

In Portugal, some innovations in healthcare policy in the recent decades had the objective to improve the vertical administrative integration of healthcare services, improve the payment models in hospital care with bundled payments, freedom for the patient to choose the hospital provider, and pay-for-performance in primary care [12, 13]. Despite the innovation, in the hospital sector, a significant policy challenge remains to be solved. The public hospitals financing systems tend to produce a cycle of debt accumulation and bailout by the government. The determinants of the phenomena have been poorly explored but could be due to (1) failure of the current financing model to correctly access the cost of a standard patient, (2) inaccurate estimation of the hospital case-mix, (3) under-coding of the hospital production, (4) inefficiencies due to weak management and waste of resources.

The variability in the debt generation process between public hospitals with similar characteristics is a good indicator that at least part of the debt is amenable to policies intended to improve procedures maintaining or increasing quality.

Is the ACO model with a shared savings system interesting for the Portuguese Health System? The answer is dependent on the correct framing of the problem that is trying to solve and the conditions for the policy implementation. If the problem to be solved is "waste" in procedures or process with little-added value to the patient in hospital settings, the ACO shared savings is, in theory, a good policy. In the Portuguese case can be interesting the focus on patient satisfaction which is currently entirely overlooked by all the performance indicators. Piloting an ACO like policy in the Civil Servants Health Insurance (ADSE) is perhaps even more interesting given the immature development of the current procurement mechanisms and the need to align the private providers with quality requirements of the Civil Servants Health Insurance. If the problem to be solved is the integration across levels of care, there is no evidence that ACO is the right policy to address that challenge.

Moreover, about the conditions for an ACO policy implementation. To pilot a shared savings model with the current public hospitals financing mechanisms is not wise. The Health and Finance Ministries

in a rare joint venture create a task force to reform the public hospital financing system. The task force issued recommendations to make the hospital financing more realistic by studying the cost function of the best performing hospitals. Moreover, the task force recommended a reviewed and updated the financing model based on the calculations of best performing hospitals. A system that is trapped in a cycle of debt accumulation and bailouts is not prepared for a shared savings system because it would consecutively fail the objectives and the incentive for saving would be absent. Moreover, it is not clear if the incentive would work at all because the provider (Public Hospital) and the payer (government) are the same overall institution. If any attempt is made, it is wise to define an expenditure growth model is essential, ACO in the US do it based on historical growth rate of the local market, given the small size of the Portuguese market this growth rate would probably be a mean of the national growth rate.

One problem that is yet to be solved by the ACO in the United States and could be a challenge is what to do poor performers, providers that consistently do not reach the quality standards and fail the savings targets [14]. Currently, the ACO organization can be in a “single track” where the quality standards and saving target are set by Medicare, however if the ACO organizations fails to meet the savings targets, Medicare will cover the losses of the ACO organization. This risk shift to the payer was created to incentive the creation of new ACO, but also to signal that quality improvement is a process and takes time.

In the ACO that are more evolved there is a “two-sided” track, where the eventual losses incurred by the ACO are shared between the ACO and Medicare. The “two-sided” track is still residual and if it is not correctly calibrated can create losses to the providers and eventual bankruptcy. In 2018 was released the ACO Pathways to Success, where the shared risk strategies between the payer (Medicare) and the provider (ACO) are further developed. Only with time, it will make it possible to evaluate the potential benefits in savings of these policies.

In the Portuguese Public Hospital systems, as mentioned before, the shared savings and shares losses system could be challenging to implement because the government is the payer and the provider. Hence, one should conclude that ACO has no place in a single-payer system. Charles Darwin famously once said that “I am a sort of machine for observing facts and grinding out conclusions," following Darwin's advice one should examine the conclusion more carefully. Nowadays, health systems have a complicated public-private mix, the interface of the public-private mix is what makes ACO an interesting policy instrument. If we give a concrete example perhaps makes it clearer, the procurement mechanism for health services from the Portuguese National Health Service (NHS) to private providers (i.e. “vales cirurgia” surgery vouchers or outpatient dialysis) could benefit from the implementation of an “ACO like” system, with a shared savings and shared losses scheme. Currently is a fee for service model of payment, with no clear mechanism of quality oversight and integration of patient quality indicators.

The procurement of health services by the Civil Servants Health Insurance (ADSE) is the most exciting gap to address with an "ACO like" policy. ADSE is a Health Insurance for all the civil servants created in the '60s of the last century. Currently is funded exclusively by the contributions of civil servants and provides health services with a network of private providers. The annual budget for 2016 was around 500 million Euros and a surplus of 100 million Euros [15]. Although ADSE currently has a surplus the aging of the insured population and the technological advance pose a threat to the insurance sustainability. The procurement of services to private providers is done on a fee for service basis with a table of fixed prices that are negotiated between ADSE and the private providers association. The implementation of a shared-savings policy to enable ADSE to impose some new monitoring indicators and incentivize efficiency improvement among the individual providers while maintaining the quality standards.

The final point is that uncertainty is part of the political process, the only way to avoid unintended consequences of policy innovation is by evaluating what is experimented. The Hospital Readmissions Reduction Program (HRRP), is an excellent example of the merits of carefully evaluating healthcare policies to get them right. Earlier studies, in 2016, have shown that the HRPP policy maintained the quality of care decreased readmissions [16], however recent studies have shown concerning results with increased mortality associated with the decrease in readmission[17]. The academic and policy discussion is still ongoing about the need to redesign the HRRP policy. If a shared savings policy is implemented in Portugal, a careful evaluation should be commissioned to make sure quality is improved or at least maintained and the policy leads to savings.

Despite all the differences between the Portuguese and the United States System some feature of the ACO model could be interesting to implement in Portugal. Namely (1) Shared savings account

between the Civil Servant Insurance and private providers, (2) Increase reliance on indicators reported by the users, (3) setting quality indicators that are linked with payment.

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