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Health Policy

journal homepage: www.elsevier.com/locate/healthpol

The Great Recession in Portugal: Impact on hospital care use

Julian Perelman^{a,*}, Sónia Felix^{b,c}, Rui Santana^a^a Escola Nacional de Saúde Pública (Universidade Nova de Lisboa), Avenida Padre Cruz, 1600-5605 Lisbon, Portugal^b Banco de Portugal, Rua do Comércio 148, 1100-150 Lisbon, Portugal^c Nova School of Business and Economics (Universidade Nova de Lisboa), Campus de Campolide, 1099-032 Lisbon, Portugal

ARTICLE INFO

Article history:

Received 12 May 2014

Received in revised form 20 October 2014

Accepted 16 December 2014

Keywords:

Recession

Austerity

Healthcare use

Portugal

ABSTRACT

The Great Recession started in Portugal in 2009, coupled with severe austerity. This study examines its impact on hospital care utilization, interpreted as caused by demand-side effects (related to variations in population income and health) and supply-side effects (related to hospitals' tighter budgets and reduced capacity).

The database included all in-patient stays at all Portuguese NHS hospitals over the 2001–2012 period ($n = 17.7$ millions). We analyzed changes in discharge rates, casemix index, and length of stay (LOS), using a before–after methodology. We additionally measured the association of health care indicators to unemployment.

A 3.2% higher rate of discharges was observed after 2009. Urgent stays increased by 2.5%, while elective in-patient stays decreased by 1.4% after 2011. The LOS was 2.8% shorter after the crisis onset, essentially driven by the 4.5% decrease among non-elective stays. A one percentage point increase in unemployment rate was associated to a 0.4% increase in total volume, a 2.3% decrease in day cases, and a 0.1% decrease in LOS.

The increase in total and urgent cases may reflect delayed out-patient care and health deterioration; the reduced volume of elective stays possibly signal a reduced capacity; finally, the shorter stays may indicate either efficiency-enhancing measures or reduced quality.

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1. Introduction

After several years of slowdown of its economy, Portugal has experienced recessions during the years 2009 (–2.9% in GDP), 2011 (–1.6%), and 2012 (–3.2%). Economic downturn was accompanied by a dramatic rise in the unemployment rate, which rose in 2009 from 7.6% to 9.4%, reaching 15.4% by the end of 2013. In the meantime, the Portuguese State has been facing a public debt crisis, leading to a financial bailout by the European Commission, the International Monetary Fund and the European Central Bank. As a

counterpart, Portugal signed in 2011 the so-called “Memorandum of Understanding” (MoU) which consisted in a compromise to implement several reforms aimed at reducing public expenditures. Among these, the budget of the National Health Service (NHS) was highly reduced in all its components. This study aims at analyzing the impact on in-patient care of the current economic and financial situation in Portugal, using data from all NHS hospitals for the 2001–2012 period. To do so, we examined the evolution of three indicators of hospitals' activity, namely the rate of discharges, the in-patient length of stay, and the average cases' complexity.

Very conflicting political debates have emerged over the last months about the health consequences of the so-called “Great Recession”, in Portugal and elsewhere in Europe [1]. These debates question current reforms

* Corresponding author. Tel.: +351 217512196.

E-mail addresses: jperelman@ensp.unl.pt (J. Perelman), felix@novasbe.pt (S. Felix), RuiSantana@ensp.unl.pt (R. Santana).

at the light of their consequences on health and health care – damaging, beneficial or neutral. As the economic situation does not seem to improve substantially (in February 2014, the OECD economic forecast for Portugal was of a 0.4% increase in GDP, see (www.oecd.org/eco/outlook/portugaleconomicforecastsummary.htm), with detrimental consequences on public budgets, more austerity measures seem inevitable. Empirical evidence is thus crucial to shed light on the current situation for future decision-making. The evidence about in-patient care is relevant for at least three reasons. First, the planning of services requires a careful analysis of current activity trends and perspectives for the future. Second, it is relevant because the most emblematic measures adopted in the Portuguese health sector have been the serious decreases in hospital budgets and physicians' payments (the other most relevant measures concerned pharmaceuticals and have already been analyzed elsewhere, see [2]). Third, it reflects global patients' and health system's response to the crisis, because the hospital care represents a major source of healthcare provision and expenditures.

The impact of recessions on healthcare use is unclear from both theoretical and empirical viewpoints. Four groups of causal mechanisms may explain how the economic crisis and austerity measures are influential. The first causal mechanisms refer to *income-related demand effects*, that is, people modifying their demand for in-patient care because of income variations. The impoverishment has probably not affected the demand for in-patient admissions and days, because of the very low co-payments and exemptions in the public sector in Portugal; international evidence shows for example that low-income people have a higher use of in-patient care [3], and longer in-patient stays [4]. Though, lower incomes and unemployment may have reduced access to private insurance and private hospitals, resulting in a higher demand for public elective in-patient care. Also, people may have delayed their use of private primary care and prevention services due to budget constraints, also resulting in a higher demand of acute services.

The second causal mechanisms refer to *health-related demand effects*, that is, people modifying their demand for in-patient care because the crisis makes them sicker or healthier. The crisis impact on health is however highly controversial in the literature. Following the crisis onset, a rise in suicides has been observed in Greece [5], Spain [6], the UK [7], and the USA [8], and a rise in mental health disorders has been observed in Greece [9,10] and Spain [11]. Data for Greece also indicate increasing cases of infectious disease, homicides, substance abuse, and poor self-reported health [5,12–14]. However, the evidence for longer periods, from studies that assessed the effects of economic cycles, is more contrasted. In particular Ruhm [15] shows in a literature review that recessions reduce mortality, related, among others, to reductions in motor vehicle fatalities; also, cardiovascular fatalities follow economic cycles, in particular deaths due to ischemic heart disease. Using recent long-time series (1970–2007), Stuckler et al. [16] confirmed that road-traffic deaths decreased with unemployment, while suicides at ages younger than 65 and deaths from alcohol abuse increased. Other authors show that the impact of recession differs among sub-populations.

For example, mortality is pro-cyclical among the elderly [17], and among women and socioeconomically disadvantaged groups [18].

The third causal mechanisms refer to *budget-related supply effects*, that is, the hospital response to budget cuts. In Portugal, the hospital payments have substantially diminished. After several years of continuous growth, their revenues have suffered a 16.6% cut in 2011, exceeding the MoU's requirement to cut hospital budgets by 15%, accompanied by a 14.7% reduction in costs [19]. All prices paid to NHS hospitals have decreased, including prices for in-patient stays, day cases, and consultations. These pressures for cost-containment may have led hospitals to reduce inefficiencies (or to cut quality), e.g. through shortening stays, and substituting day cases for in-patient admissions. Anecdotal evidence suggests also strong difficulties in daily practice due to uncertainty, to the necessity to adapt to rapid changes in policies and regulation, and to the lack of material and human resources (see below). These difficulties reveal greater capacity constraints that may have reinforced the need to reduce length of stay, but also to decrease the number of admissions. This decrease may be achieved, for example, through refusing patients who do not belong to the catchment area, or patients whose condition could be treated as ambulatory.

Finally, *capacity-related supply effects* may be at play. While hospital budgets were diminished, large proportional salary cuts hit all civil servants, including all professionals at NHS hospitals, who also experienced higher income tax rates. Recent evidence shows that the worsening of economic circumstances have led professionals to migrate, leading to shortages in supply [20]. The motivation may have also been affected by the lower wages, and by the reduction in the prices of specific interventions paid by fee-for-service, such as some elective surgeries. The country migration, so as the possible (but not demonstrated) lower motivation and quits to the private sector, coupled with the severe limitations on recruitment, may have reduced hospitals' capacity to maintain the volume of admissions, and prompted the need to enhance efficiency.

From an empirical viewpoint, similarly ambiguous findings have been observed in regard to the influence of the economic context on healthcare use. While long-term trends show that hospitalizations increase when the economy strengthens [21], the recent evidence about the Great Recession in Greece tells a very different story. In a review of the literature for the 2009–2013 period, Simou and Koutsogeorgou [22] indicate that admissions to public hospitals rose by 24% in 2009–2010, and by 8% in the first half of 2011, which they interpret as due to the decline in unaffordable private care.

We are thus living a historical period to observe the mechanisms and causalities leading to significant changes in healthcare use; this study contributes to the evidence on this issue.

2. Materials and methods

We used a comprehensive database including all individual in-patient stays from all Portuguese NHS hospitals

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