

# Understanding The Economic Burden of Secondary Progressive Multiple Sclerosis in Portugal

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## Introduction

- SPMS is a high severity disease with increased hospitalization rates when compared to RRMS<sup>1</sup> and is responsible for high rates of unemployment and productivity losses<sup>2</sup>.
- In the Portuguese Population<sup>3</sup> (N = 10 238 800), the MS prevalence<sup>4</sup> is estimated at **56.2/100,000** (N = 5 754), with the following estimated percentages:
  - 81.8% of MS patients are in RRMS, with **7.8%** of whom in the transition to SPMS (N=367)<sup>2,5</sup>;
  - 9.5%** of MS patients have a diagnosis of SPMS<sup>2</sup> (N = 547);
  - Consequently, **914 patients are in progression**.
- There is limited information on the epidemiology and the economic burden of SPMS in Portugal.

## Objective

- To estimate the costs of Portuguese patients with SPMS, by disability level, from the societal perspective.

## Methods

### European Multiple Sclerosis Burden of Illness Study

- Cross-sectional, observational study<sup>6</sup> in 16 European countries, including a total of 16,807 participants (Figure 1).

Figure 1. Participating countries (n=16) in the European Multiple Sclerosis Burden of Illness Study<sup>6</sup>

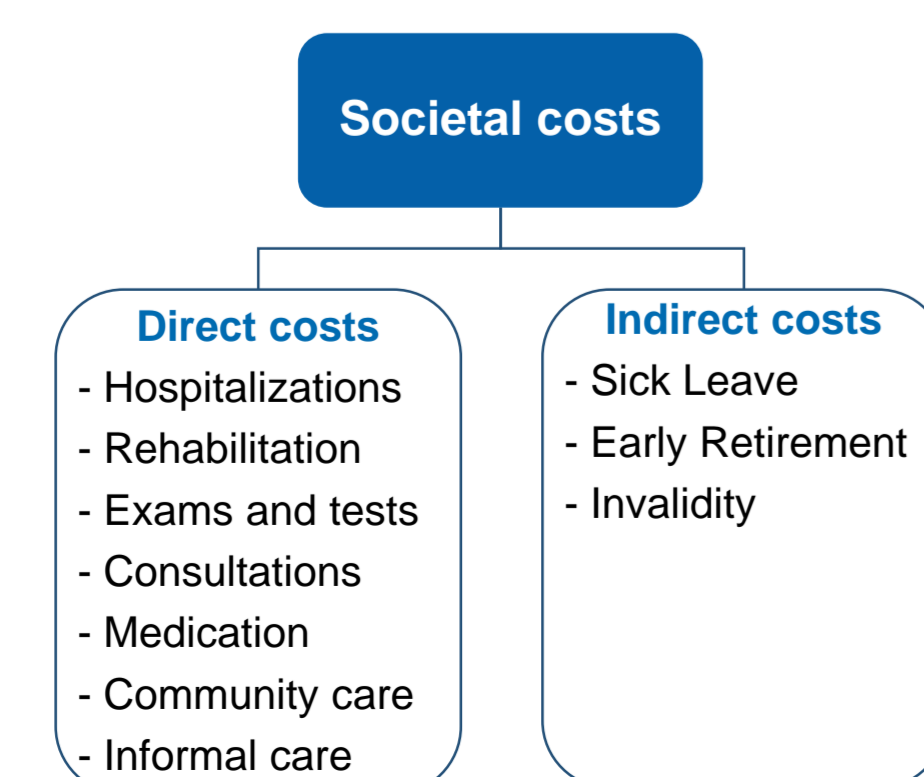


Note: Countries included in the study in dark blue, with Portugal in blue

### Portuguese MS subgroup (n=535)<sup>7</sup>

- The vast majority of patients participating were members of the Sociedade Portuguesa de Esclerose Múltipla (SPEM).
- Data collected between October 2015 and March 2016 with a standard questionnaire.
- Societal costs, expressed in 2015 EUR, included direct and indirect costs<sup>8</sup>, as described in Figure 2.

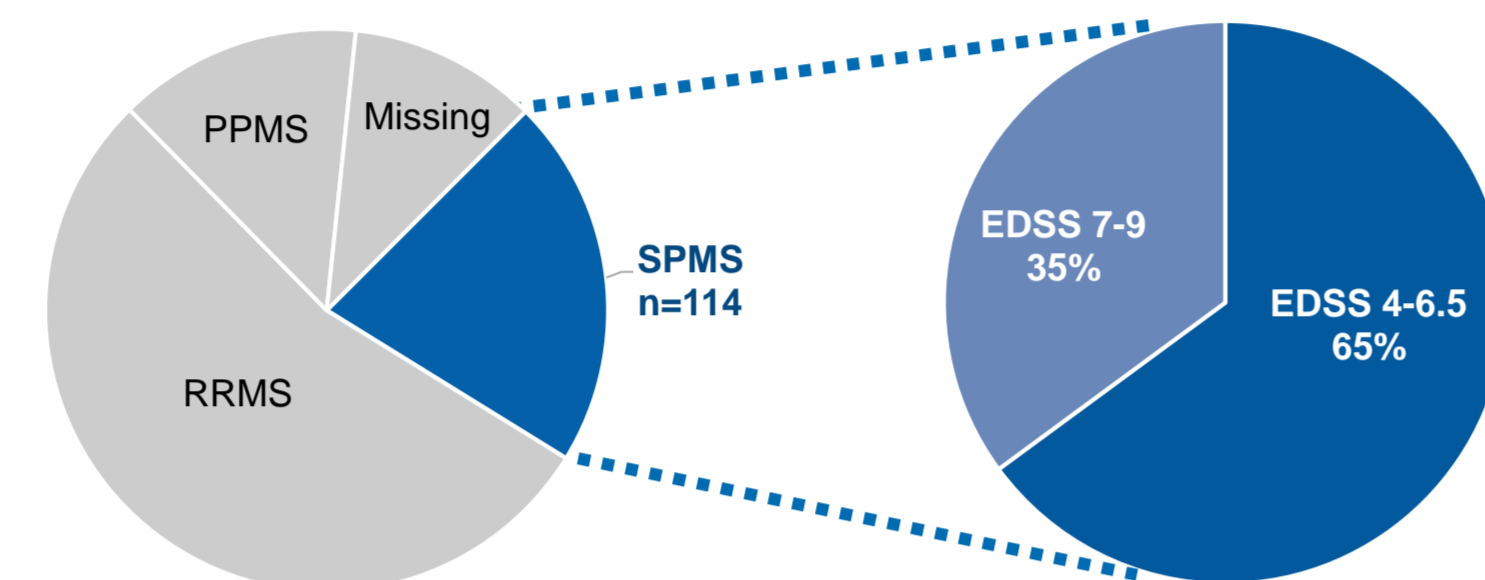
Figure 2. Costs included in the analysis



## Results

- The Portuguese subgroup was characterized by the type of MS and EDSS score in SPMS (Figure 3).

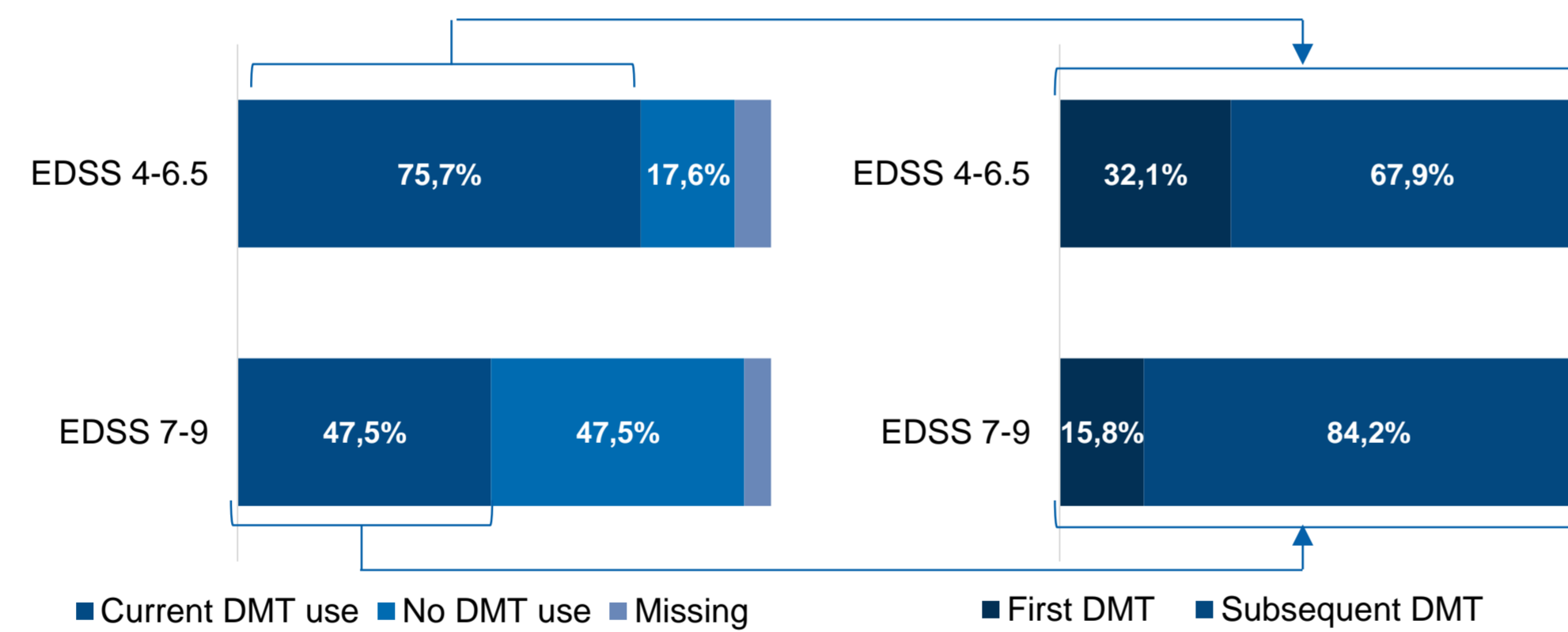
Figure 3. SPMS patients by EDSS (n=114)



Abbreviations: RRMS – Relapsing-remitting MS; SPMS – Secondary progressive MS; PPMS- Primary progressive MS; EDSS – Expanded Disability Status Scale

- Most EDSS 4-6.5 and about half of EDSS 7-9 patients were on DMT (Figure 4). Among these, the vast majority were on a subsequent DMT.

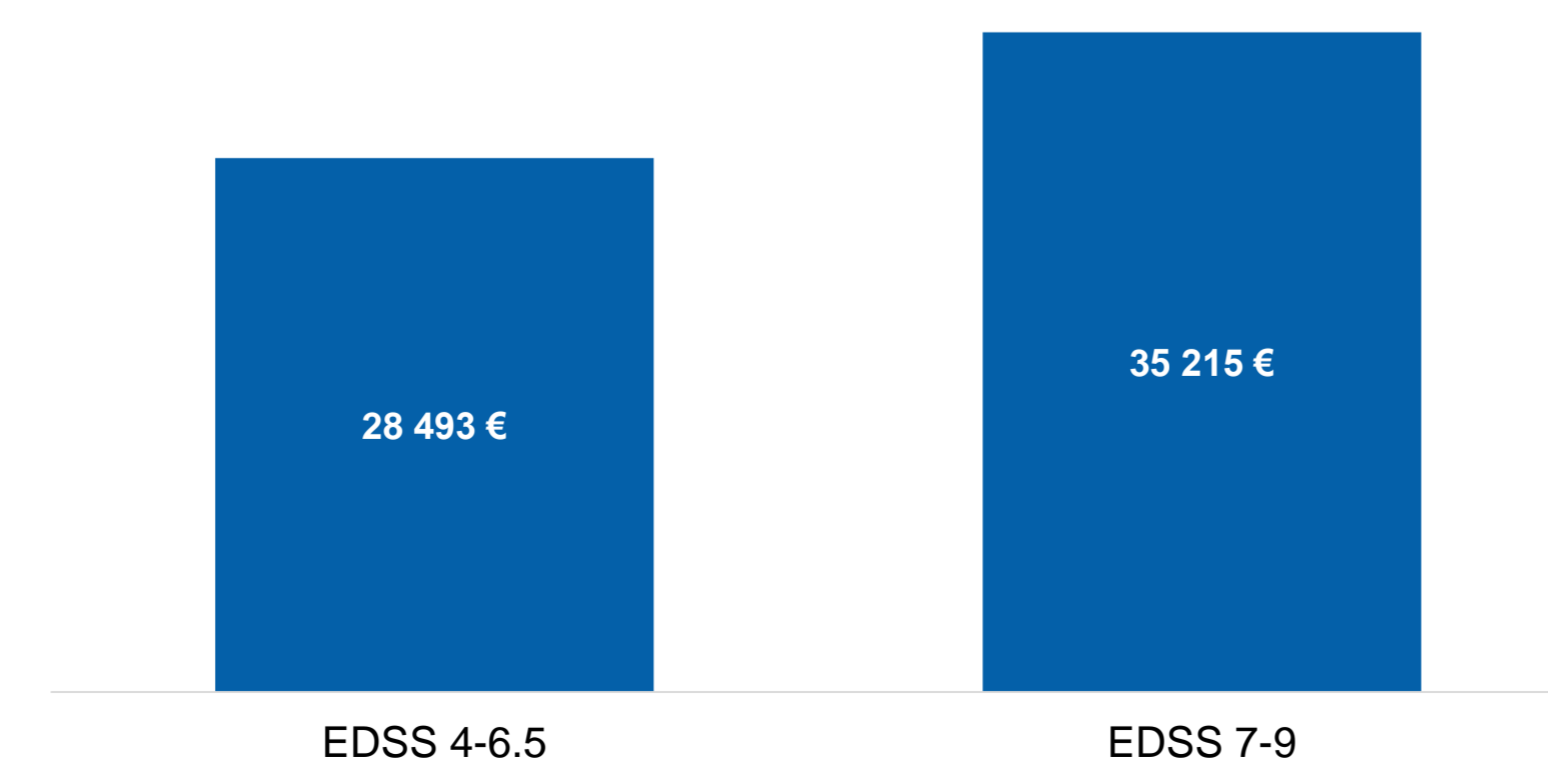
Figure 4. Current use of DMT and breakdown by use of first or subsequent DMT by EDSS in SPMS patients



Abbreviations: DMT – Disease Modifying Treatments

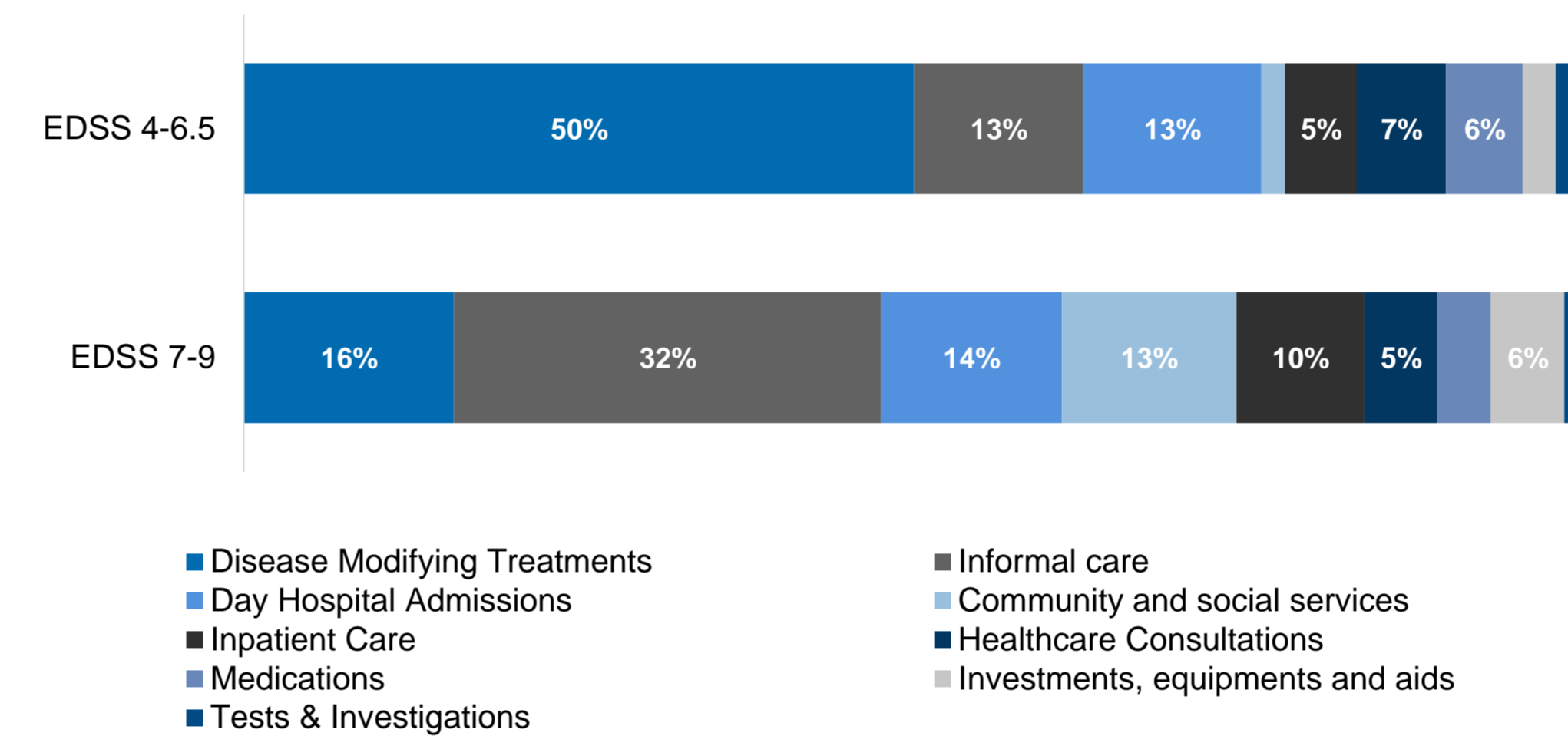
- The mean annual costs per patient are shown in Figure 5. These costs were approximately **€7 000 higher** in EDSS 7-9 patients than in EDSS 4-6.5 patients.
- Direct costs represented 64.3%/66.9% of the overall costs in EDSS 4-6.5/EDSS 7-9.

Figure 5. Mean annualized total cost by EDSS in SPMS patients.



- Within **direct costs**, DMT in EDSS 4-6.5 and informal care (family assistance) in EDSS 7-9 were the main cost drivers (Figure 6).

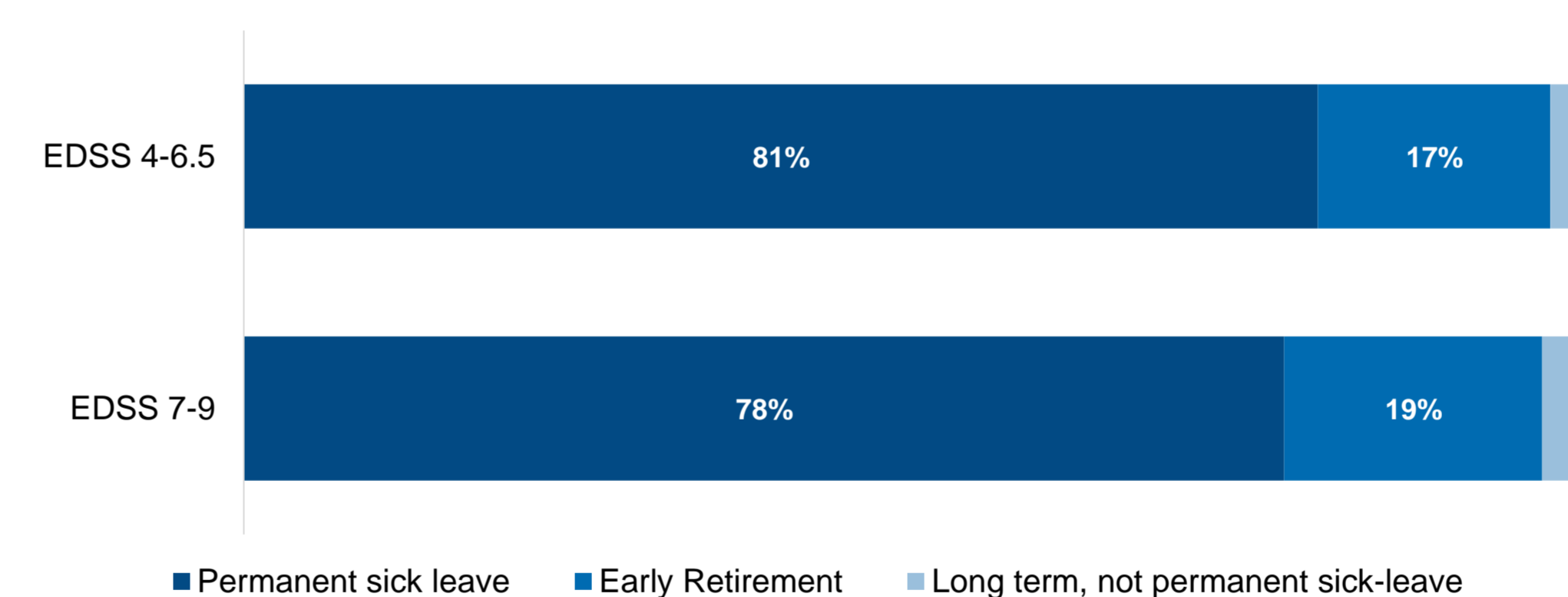
Figure 6. Breakdown of direct costs by EDSS in SPMS patients



Note: Labels are not shown for percentages < 5%.

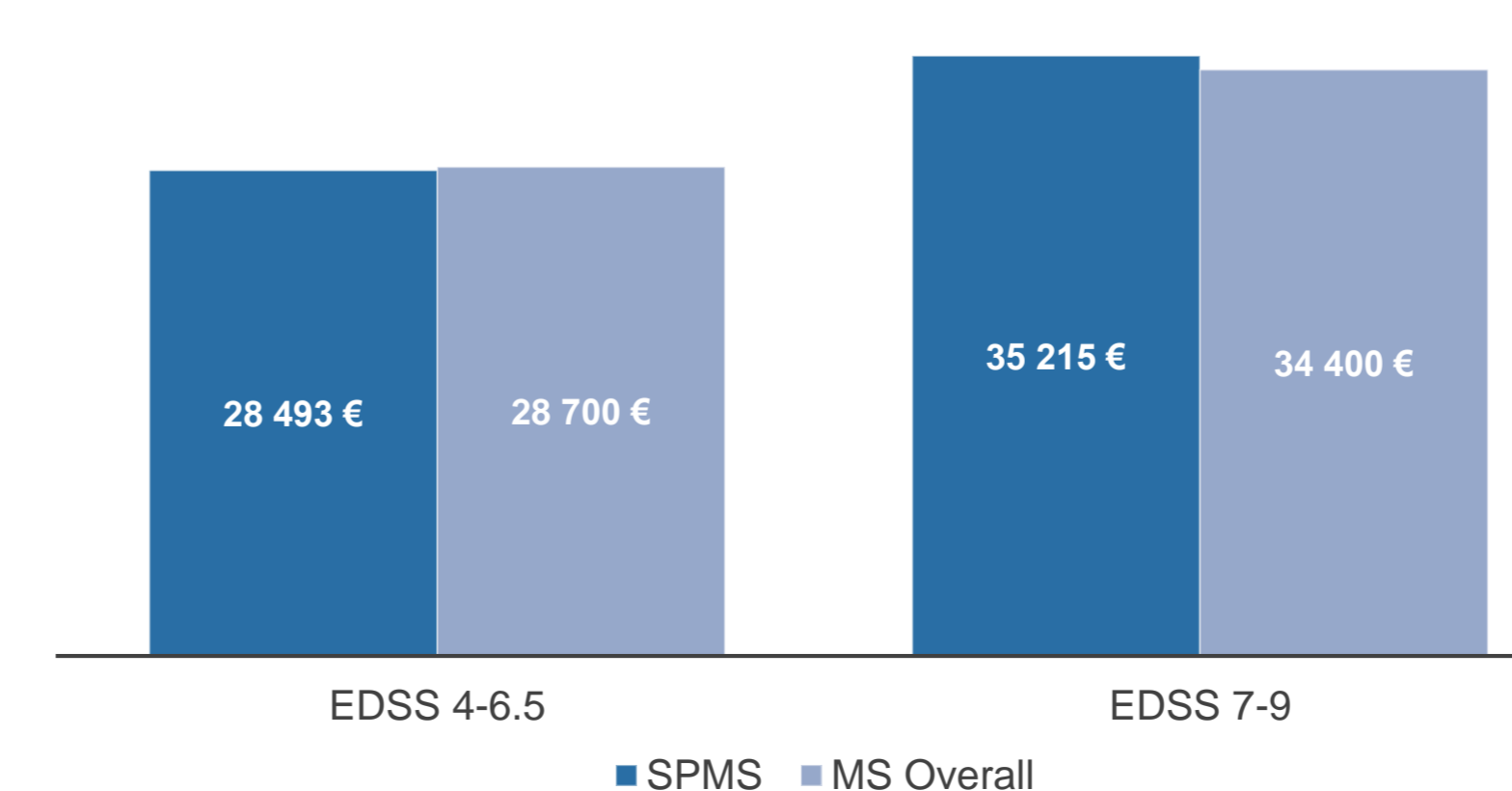
- Within **indirect costs**, permanent sick leaves accounted for the vast majority of costs, irrespective of the EDSS score (Figure 7).

Figure 7. Breakdown of indirect costs by EDSS in SPMS patients



- The total costs by the EDSS score in the SPMS patient sample are **similar** to the overall costs in the total MS sample (Figure 8).

Figure 8. Total costs by EDSS in SPMS patients and overall MS sample



## Conclusions

- The mean costs per SPMS patient in Portugal are **28 493€ for EDSS 4-6.5** and **35 215€ for EDSS 7-9**.
- Assuming a total of **914 patients in progression**, and considering EDSS proportions and cost/patient (Figures 3 and 5), the **annualized economic burden** in Portugal would be **approximately 28.2 million euros**.
- As a whole, **these data represent a snapshot** that may alert health professionals and governmental entities and thereby contribute to improving healthcare planning and resource allocation. Yet, retrospective diagnosis, lack of diagnosis criteria, and limited treatment options may underestimate the SPMS population size and the overall due costs.
- Early diagnosis and treatment of SPMS would be advantageous in preventing progression to more severe disease and consequently reduce the mean costs per patient.** The update of these data using a national patient registry may be relevant for capturing upcoming clinical practice changes.

## References

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