

# Budget Impact Analysis of lurasidone in the treatment of adult patients with schizophrenia in Spain

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## INTRODUCTION AND OBJECTIVE

● Schizophrenia is a chronic mental disorder associated with a significant humanistic and economic burden for patients, their families, and society <sup>1-3</sup>.

● Atypical antipsychotics (AA) are the first line treatment for patients with schizophrenia<sup>4</sup>. However, some of these AA are associated with cardiometabolic events (CME) and a poor adherence profile, which has a significant clinical and economic impact<sup>5-8</sup>.

● Latuda® (lurasidone) is an AA authorized for the treatment of adults and adolescents (≥ 13 years) with schizophrenia<sup>9</sup>. It has shown to effectively treat acute symptoms and prevent long-term relapses, while demonstrating minimal effects on metabolic parameters<sup>10</sup>

● The objective of this analysis is **to evaluate the budget impact (BI) of lurasidone in the management of adult patients with schizophrenia in Spain.**

## METHODS

● A BI model was developed from a payer's perspective (Spanish Health System) over a three-years’ time horizon (2022-2024).

● The target population are adult patients with schizophrenia in Spain who are treated with AA (**Table 1**). The estimation of this population was based on the Spanish adult population<sup>11</sup> to which the prevalence of schizophrenia in adults from the review by Moreno et al.<sup>12</sup> was applied. Finally, the population treated with AA obtained from a real-life study in Spain was selected<sup>13</sup>

- A total of 137,154, 137,244 and 137,350 patients would be candidates for treatment with lurasidone over the 3-year time horizon, respectively.

Table 1. Target population				
	Epidemiological data	2022	2023	2024
Adult population (≥ 18 years)	83.1% <sup>11</sup>	39,389,926	39,415,963	39,446,398
Prevalence of schizophrenia	0.4% <sup>12</sup>	157,560	157,664	157,786
Treated with antipsychotics	93.2% <sup>13</sup>	146,846	146,943	147,056
Treated with AA	93.4% <sup>13</sup>	137,154	137,244	137,350
AA: Atypical antipsychotics				

● The analysis estimated the net BI associated with an increased penetration of lurasidone (potential scenario) vs current market penetration (current scenario) in Spain (**Table 2**).

- A market Share (MS) for lurasidone in current scenario of 0.8% (constant over the 3 years) was calculated<sup>14,15</sup> and a MS of 1.5%, 2.5% and 3.8% was assumed for years 1, 2 and 3, respectively. A differential uptake rate of lurasidone from oral and injectable treatments was assumed (90% and 10%, resp).

- The AA included in the analysis are those with approved authorization in the management of adult patients with schizophrenia (both oral and injectable).

Table 2. Market share							
	Treatment	Current scenario*			Potential scenario†		
		Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Oral	Lurasidone	0.85%	0.85%	0.85%	1.50%	2.50%	3.80%
	Olanzapine	26.24%	26.24%	26.24%	26.04%	25.74%	25.34%
	Aripiprazol	13.79%	13.79%	13.79%	13.69%	13.53%	13.32%
	Quetiapine	10.78%	10.78%	10.78%	10.70%	10.58%	10.42%
	Risperidone	9.59%	9.59%	9.59%	9.52%	9.41%	9.26%
	Paliperidone	6.26%	6.26%	6.26%	6.21%	6.14%	6.04%
	Amisulpride	2.86%	2.86%	2.86%	2.84%	2.80%	2.76%
	Clozapine	5.99%	5.99%	5.99%	5.95%	5.88%	5.79%
	Ziprasidone	1.65%	1.65%	1.65%	1.64%	1.62%	1.60%
	Caripracine	0.86%	0.86%	0.86%	0.85%	0.84%	0.83%
Injectables	Sertindol	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
	Paliperidone monthly	8.92%	8.92%	8.92%	8.89%	8.85%	8.79%
	Paliperidone quarterly	7.24%	7.24%	7.24%	7.22%	7.19%	7.14%
	Risperidone	1.44%	1.44%	1.44%	1.44%	1.43%	1.42%
	Aripirprazol	3.50%	3.50%	3.50%	3.49%	3.48%	3.45%
TOTAL		100%	100%	100%	100%	100%	100%
AA: Atypical antipsychotics * Based on the IQVIA's updated antipsychotic unit data for TAM Jan '21, the number of patients has been estimated according to the SmPC posology. Of these patients, the percentage corresponding to patients with schizophrenia has been estimated based on a IQVIA 2017 market study. †Based on the market share of lurasidone, the shares of the other treatments have been calculated, considering the differential uptake of lurasidone to oral and injectable treatments.							

● Direct costs included treatment-related costs (drug and administration costs), hospitalizations’ costs caused by non-adherence and CME management costs. This annual costs are summarized in **Table 3**.

● Drug costs were expressed as the pharmacy purchase price (PPP)<sup>16</sup> considering the deduction in invoicing established by Royal Decree Law 8/2010<sup>17</sup>.

- Posology of each treatment was assumed as the Defined Daily Dose (DDD)<sup>18</sup> and cost/day analysis was calculated on the basis of the cost/mg of the presentation with the dose closest to DDD.

● Cost of intramuscular administration was considered for injectable treatments (€21.48 per administration, assumed to be the cost of a primary care nurse visit)<sup>19,20</sup>.

● Costs of weight gain >7%, diabetes, dyslipidemia, hypertension and prolonged QT were considered as CME or predisposing conditions for CME associated with some AAs and with a significant clinical and economic burden.

- Annual costs of CME were calculated based on the annual incidence observed for each treatment<sup>21</sup> and their management costs<sup>6,19</sup>

- Based on the assumptions made by Kearns et al. (2021), the cost of dyslipidemia and hypertension were assumed to be the cost of one visit to a primary care physician every 3 months and one visit to a cardiologist per year<sup>6,19</sup>

● Poor adherence to antipsychotic treatment derived on an increased hospitalization rate. Associated costs were calculated considering the annual incidence of hospitalization associated with non-adherence and the cost of hospitalization of patients with schizophrenia<sup>22</sup>.

- Annual incidence of hospitalization was derived from the percentage of non-adherent patients (MRP<80) for each treatment<sup>23,24</sup> and the annual hospitalization rate of non-adherent patients<sup>7</sup>

-The hospitalization costs considered include hospital stay and pharmacological treatment for people experiencing these episodes obtained from the disease-related group 430 (DRG-430, psychosis) in Spain<sup>22</sup>.

Table 3. Annual costs					
	Drugs	Treatment	Anual costs		Total anual costs
			CME	Hospitalization of non-adherent patients	
Oral	Lurasidone	€ 786.79	€ 22.24	€ 1,107.19	€ 1,916.21
	Olanzapine	€ 689.46	€ 95.59	€ 1,301.46	€ 2,086.51
	Aripiprazol	€ 936.75	€ 61.48	€ 1,309.01	€ 2,307.24
	Quetiapine	€ 788.58	€ 52.48	€ 1,514.60	€ 2,355.66
	Risperidone	€ 253.19	€ 67.85	€ 1,163.77	€ 1,484.82
	Paliperidone	€ 719.31	€ 40.10	€ 1,309.63	€ 2,069.04
	Amisulpride	€ 485.09	€ 49.48	€ 1,309.63	€ 1,844.20
	Clozapine	€ 194.00	€ 49.48	€ 1,309.63	€ 1,553.11
	Ziprasidone	€ 855.93	€ 49.48	€ 1,461.79	€ 2,367.19
	Caripracine	€ 785.32	€ 48.03	€ 1,309.63	€ 2,142.98
Injectables	Sertindol	€ 1.560.78	€ 49.48	€ 1,309.63	€ 2,919.89
	Paliperidone monthly	€ 2.736.39	€ 36.80	€ 1,074.89	€ 3,848.08
	Paliperidone quarterly	€ 2.042.94	€ 56.40	€ 1,074.89	€ 3,174.23
	Risperidone	€ 4.370.40	€ 59.89	€ 1,074.89	€ 5,505.18
	Aripirprazol	€ 3.759.75	€ 67.77	€ 1,074.89	€ 4,902.42
CME: cardiometabolic events					

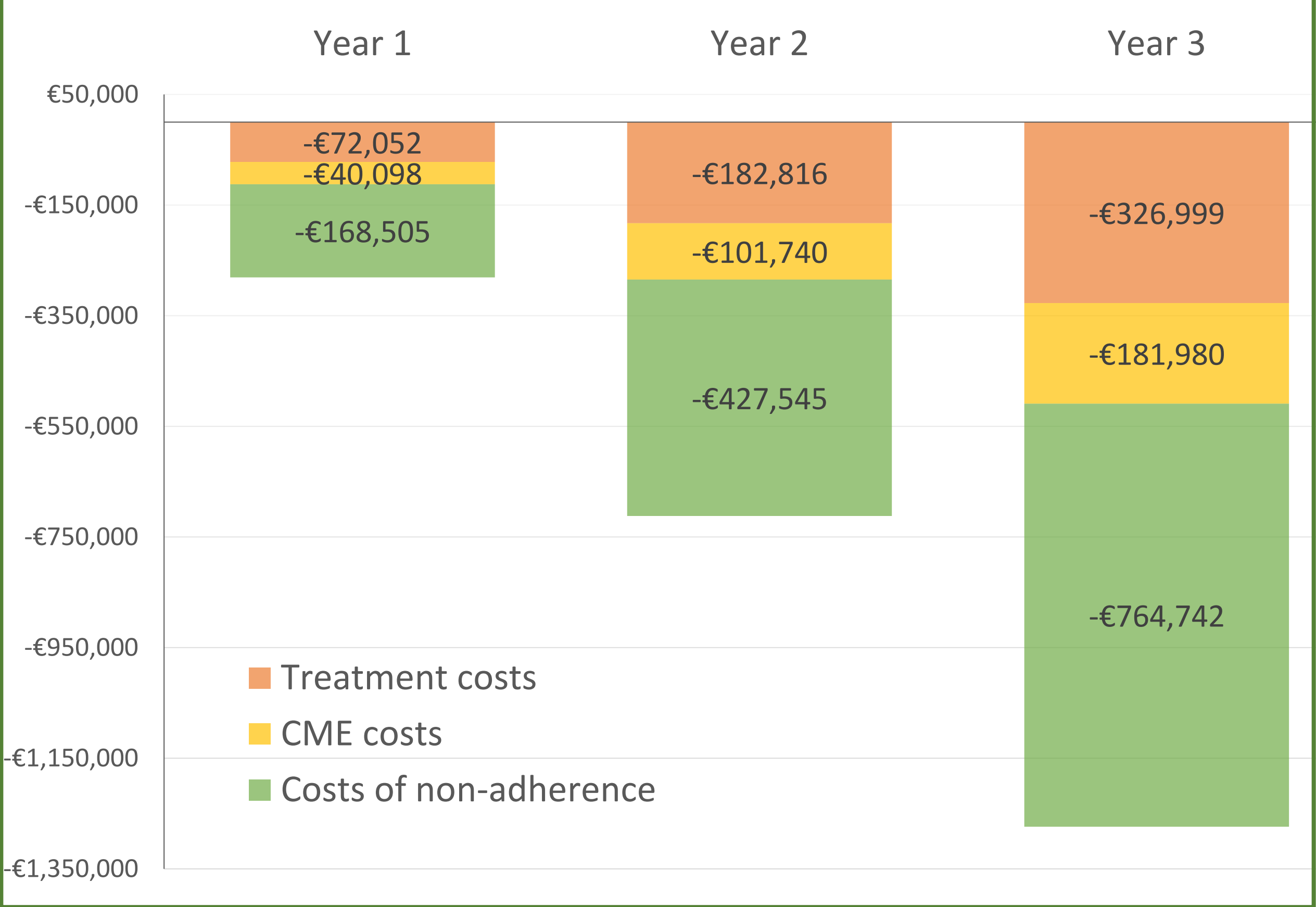
## RESULTS

● The increased use of lurasidone for the treatment of adults with schizophrenia leads to savings of €280,655, €712,100 and €1,273,721 for the year 2022, 2023 and 2024, respectively, and a total of €2,266,476 over the 3 years (**Table 4**).

● Costs with the greatest influence on the savings are those associated with hospitalizations due to non-adherence (60.0% of the savings), followed by treatment costs (25.7%) and cardiometabolic events (14.3%).

Table 4. Budget impact				
	Drugs	Year 1	Year 2	Year 3
Oral	Lurasidone	€ 1,711,481	€ 4,342,504	€ 7,767,357
	Olanzapine	€ -563,865	€ -1,430,682	€ -2,559,034
	Aripiprazol	€ -327,802	€ -831,726	€ -1,487,692
	Quetiapine	€ -261,656	€ -663,894	€ -1,187,495
	Risperidone	€ -146,655	€ -372,104	€ -665,576
	Paliperidone	€ -133,349	€ -338,345	€ -605,191
	Amisulpride	€ -54,276	€ -137,714	€ -246,326
	Clozapine	€ -95,863	€ -243,232	€ -435,065
	Ziprasidone	€ -40,307	€ -102,270	€ -182,929
	Caripracine	€ -18,918	€ -48,000	€ -85,857
Injectables	Sertindol	€ -645	€ -1,637	€ -2,928
	Paliperidone monthly	€ -145,206	€ -368,429	€ -659,002
	Paliperidone quarterly	€ -97,280	€ -246,826	€ -441,494
	Risperidone	€ -33,643	€ -85,362	€ -152,685
	Aripirprazol	€ -72,670	€ -184,383	€ -329,802
TOTAL		€ -280,655	€ -712,100	€ -1,273,721

Figure 1. Budget impact



## CONCLUSIONS

“An increased utilization of lurasidone for the treatment of adults with schizophrenia generates savings of more than € 2M over 3 years for the National Health System. This is due to the displacement of more expensive alternatives and to a lower CME profile and a higher adherence rate associated with lurasidone”

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