

# Socio-economic impact of long-acting injectable buprenorphine (LAIB) compared to standard opioid substitution therapy (OST) in France

Petit N<sup>1</sup>, Melin P<sup>2</sup>, Chappuy M<sup>3</sup>, Primel R<sup>4</sup>, Carette J<sup>4</sup>, Leleu H<sup>4</sup>, Touchon B<sup>5</sup>, Vesin A<sup>5</sup>, Allain L<sup>5</sup>, Zavisic S<sup>6</sup>

<sup>1</sup>Groupement Hospitalier de Territoire Coeur Grand Est / Centre Hospitalier Verdun de Saint-Michel / Centre Hospitalier de Saint-Dizier, Verdun, France <sup>2</sup>Centre Hospitalier de Gaule Anthonioz / CSAPA / Association Addictions France, Saint-Dizier, France <sup>3</sup>Hospices Civils de Lyon / Addiction treatment service / CSAPA, Lyon, France <sup>4</sup>Public Health Expertise, Paris, France <sup>5</sup>Camurus, Paris, France <sup>6</sup>Camurus, Lund, Sweden

## Objectives

Long-acting injectable buprenorphine (LAIB) is an innovative therapeutic option in the medical management of opioid dependence. It maintains plasma concentrations of buprenorphine within the effective therapeutic range. This prolonged action provides a better clinical response compared to standard treatments. To date, it can only be prescribed by doctors working in prisons, hospitals or Addiction Treatment, Support and Prevention Centers (CSAPA).

The objective of this study is to assess the socio-economic impact of treating opioid dependence in patients with oral opioid substitution therapy (OST) and LAIB in France on mortality, loss of productivity as well as health, social and legal issues.

## Method

A budget impact model combined with a review of the literature and expert opinion was used to qualify and quantify the annual impacts and costs associated with mortality, loss of productivity and health, social and legal issues in patients treated with oral OST or LAIB in France. The frequency of occurrence of impacts in patients treated with oral OST or LAIB was estimated based on French and UK data (Table 1).

In the absence of specific data available for patients treated with LAIB, the reduction in opioid-negative urine samples in patients treated with LAIB vs. oral OST (Lofwall 2018)<sup>5</sup> was considered applicable for extrapolating the reduction in the incidence of HIV infections and mortality related to opioid use. The reduction in nights spent in prison and court appearances was estimated based on the reduction in the number of crimes committed (Marsden 2023)<sup>6</sup>. The economic valuation of these impacts from a societal perspective was based on French data. Deterministic sensitivity analyses (taking into account parameter variability of  $\pm 20\%$ ) were performed to explore the uncertainty in the results of the analysis.

Table 1. All impacts and their costs included in the model

Impact fields	Impact	Frequency of occurrence		Source	Costs
		Oral OST	LAIB		
Health	Emergency room	0,80	0,56 (-30%)	Marsden 2023 <sup>6</sup>	€ 260
	Ambulance journeys	0,38	0,23 (-39%)		€ 117
	Hospitalisation	0,05	0,40 (x8)		€ 498
	Outpatient consultation	0,89	1,88 (x2)		€ 30
	Interview with a CSAPA advisor	4,80	3,67 (-24%)		€ 31
	Consultation with an addiction treatment team	26,07	5,21 (-80%)		Phillips-Jackson 2020 <sup>8</sup>
	Urinary tests	13,04	2 (-85%)	€ 2,50	
	Supervised consumption	113,76	0	€ 7	
	Incidence of HIV infections <sup>1</sup>	3,2%	2,6% (-19%) <sup>5</sup>	Delorme 2021 <sup>3</sup>	€ 20 851
	Treatment - Buprenorphine	52,80%	0%	OFDT <sup>7</sup>	€ 2 183
Treatment - Methadone	46,30%	0%	€ 2 444		
Treatment - Methadone / Naloxone	2,60%	0%	€ 987		
Treatment - LAIB	0%	100%	Hypothesis	€ 4 320	
Social	Social housing	0,61	0,33 (-46%)	Marsden 2023 <sup>6</sup>	€ 270
Mortality and productivity losses	Mortality associated with opioid use <sup>1</sup>	0,20%	0,16% (-19%) <sup>5</sup>	DRAMES <sup>1</sup>	€ 4,2M
	Productivity losses related to unemployment	16,61%	9,61% (-42%)	OFDT <sup>7</sup>	€ 21 622
	Productivity losses due to sick leave	0,56	1,34 (+140%)	Marsden 2023 <sup>6</sup>	€ 83
Justice	Crimes committed	0,61	0,56 (-8%) <sup>6</sup>	Marsden 2023 <sup>6</sup>	€ 3 065
	Police custody	0,75	0,56 (-25%)	2023 <sup>6</sup>	€ 61
	Prison nights <sup>2</sup>	34	27,51 (-8%) <sup>6</sup>	Connock 2007 <sup>2</sup>	€ 107
	Court appearance <sup>2</sup>	1,4	1,13 (-8%) <sup>6</sup>	2007 <sup>2</sup>	€ 254

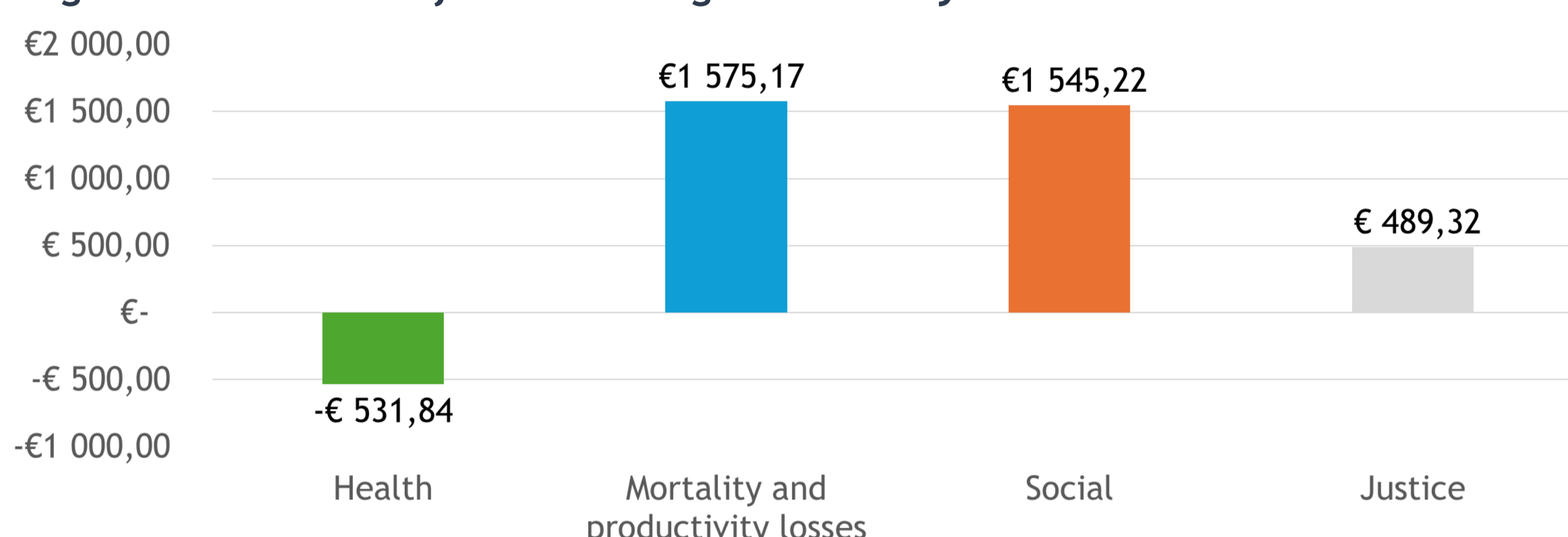
## Results

The annual cost of treating a patient with oral OST is estimated at € 23 115 per year. The cost of treating a patient with LAB is estimated at € 20 037 per year.

✓ LAIB would generate total annual savings of € 3 078 per patient.

These savings are mainly driven by a reduction in mortality and productivity gains. Part of the costs of death are also attributed to the social sphere (cost of living, family, quality of life, retirement). These savings generated by LAIB offset the additional costs in the health sector resulting from the higher cost of LAIB treatment compared to oral OST. (Figure 1).

Figure 1. Breakdown of annual savings achieved by societal sector

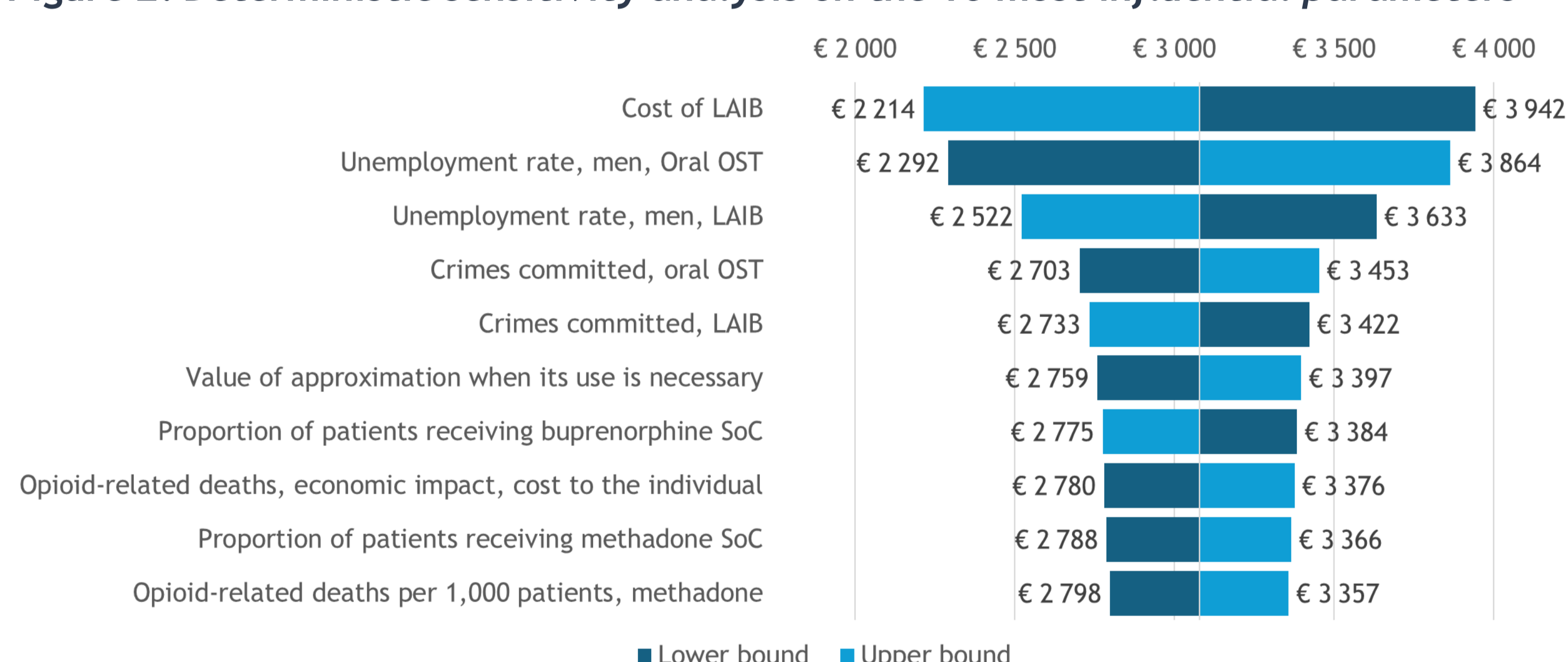


SoC : Standard of Care

✓ Deterministic sensitivity analyses indicate that the results are subject to little uncertainty. The annual savings for a patient treated with LAIB compared to a patient treated with oral OST would be between € 2 214 and € 3 942.

The parameters that most influence the results are those relating to treatment (cost of LAB, proportion of patients receiving oral OST [methadone or buprenorphine or buprenorphine/naloxone]), mortality and productivity losses, and the proportion of crimes committed. (Figure 2).

Figure 2. Deterministic sensitivity analysis on the 10 most influential parameters



## Conclusions

There is a significant socio-economic impact associated with problematic opioid use in France. Treating patients with LAIB, compared to oral OST, would reduce this impact and lead to substantial savings for society in France.

Considering a target population of 23,000 eligible patients (HAS, Opinion of the Transparency Commission) who only receive prescriptions from doctors practicing in hospitals, CSAPAs or prisons, the savings generated by the LAIB would amount to more than €70 million per year.

## References

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