COST-EFFECTIVENESS OF LONG ACTING INJECTABLE BUPRENORPHINE VERSUS SUBLINGUAL BUPRENORPHINE TO TREAT OPIOID USE DISORDER IN SWEDEN AND THE UNITED KINGDOM

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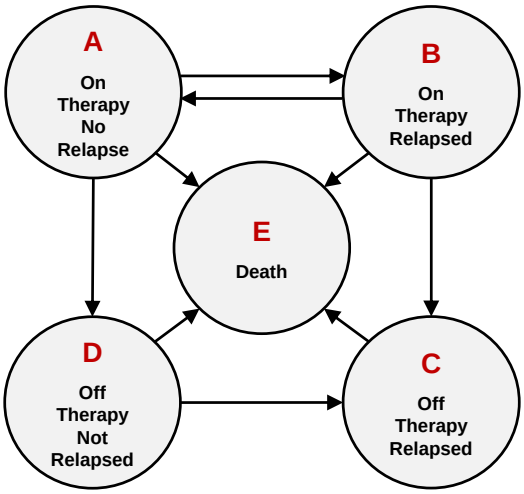
BACKGROUND / OBJECTIVE

Sublingual buprenorphine (SL-BPN) ± naloxone (NX) for the treatment of opioid use disorder (OUD) is associated with suboptimal adherence, diversion, and misuse,[1] which perpetuate diminished treatment outcomes, social stigma for patients and healthcare providers, and increased medical and societal costs.[2] A recent Phase 3 double-blind, double-dummy trial demonstrated superior efficacy for abuse-deterrent weekly and monthly depot buprenorphine (SC-BPN) vs. SL-BPN/NX in terms of cumulative illicit opioid use over 24 weeks.[3] Given the growing burden of opioid addiction in Europe, we assessed the pharmacoeconomic benefits of SC-BPN from in the UK and Sweden.

METHODS

- Modeled cohorts treated with SC-BPN or SL-BPN transited through a 5-state Markov model (**Fig 1**) for 52 weeks.

Fig 1. Markov Model Structure



- Cohorts accumulated the following OUD-related costs (note that OUD treatment costs were excluded):
  - ***Direct Medical Costs***: primary care, emergency department, inpatient, mental health, drug-related deaths, and neonatal services
  - ***Societal Costs***: crime (arrest, court, prison, victim losses) and other (lost wages and productivity, and childcare)
- Within treatment transition probabilities were derived from the Phase 3 clinical trial.[3]
- For other transitions and OUD-related events not measured in the trial, probabilities and costs were modeled based on inputs from the peer-reviewed literature.

METHODS (CON'T)

- Probabilistic sensitivity analysis assessed the impact of underlying model uncertainty on outcomes. This is represented by the listed 95% credible intervals (CIs)
- Costs are for the year 2016 (no discounting applied).

RESULTS

- SC-BPN patients spent 4 fewer weeks using illicit opioids versus SL-BPN (24 vs. 27), and thus SC-BPN patients saved £5,276 per patient annually:
  - ***SC-BPN***: £44,517 (95% CI: £37,550- £51,436)
  - ***SL-BPN***: £49,793 (95% CI: £41,602- £58,031)
- The costs in both treatment groups were primarily (80%) attributable to reduced crime and secondarily (12%) to reduced medical expenditures (**Table 1**).

Table 1. Modeled Annual Costs in the UK

	SC-BPN	SL-BPN	Difference
Total Cost	**£44,517**	**£49,793**	**-£5,276**
Medical	£5,157	£5,800	-£643
Crime	£35,707	£40,158	-£4,451
Other Societal	£3,652	£3,834	-£182

- Similar trends were observed from the Swedish perspective; although, lower rates of acquisitive crime and incarceration led to medical costs comprising a larger portion (18%) of the total costs than for the UK analysis (annual cost per patient below):
  - ***SC-BPN***: 466,485 kr (95% CI: 393,477 kr - 540,015 kr)
  - ***SL-BPN***: 521,767 kr (95% CI: 435,950 kr - 608,010 kr)

CONCLUSIONS

- SC-BPN was associated with lower modeled costs versus SL-BPN (and SC-BPN/NX) in the UK and Sweden.
- These findings should be interpreted carefully as some are not based on direct observation, nor is SC-BPN pricing considered as it is not yet determined.
- Furthermore, treatment effects in the Phase 3 trial may have been diminished due to the double-dummy, double-blind design requiring daily treatment of both groups.
- Nevertheless, SC-BPN was found to improve clinical outcomes and reduce the total economic burden of OUD.

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