Flexible-Dose Depot Buprenorphine Injection for Opioid Substitution Treatment in Heroin-Addicted Adults: A Swedish Pharmacoeconomic Perspective

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Background

- Medication assisted treatment (MAT) in Sweden has of tradition a strict policy for illicit drug use while receiving MAT, and often excluding prescription opioid abusers from MAT (i.e., primarily treating heroin users).
- Heroin use is a risk factor for increased healthcare utilization, criminality, and overdose death: risks that are magnified by MAT discontinuation.
- A recent, 24-week, Phase-3 clinical trial enrolling primarily heroin-dependent subjects demonstrated superiority of an investigational depot product (CAM2038) versus sublingual buprenorphine + naloxone (SL-BNX) in cumulative illicit opioid use.[1]
- In prior analyses, CAM2038 was estimated to reduce direct medical costs versus SL-BNX for MAT.[2,3]
- Objective: Estimate the economic impact of CAM2038 vs SL-BNX from a Swedish perspective.

Methods

- A Markov microsimulation simulated patient progression through MAT health states over 52 weeks (**Figure 1**).
- Swedish MAT treatment patterns were represented by (A) assuming only heroin-dependent patients were treated, and (B) ≤3 consecutive weeks of on-MAT illicit opioid use were allowable before involuntary MAT discontinuation.
- On-treatment transition probabilities (Figure 1, A-B3) were derived from patient-level analysis of the Phase 3 clinical trial, and others from observational studies.
- Probabilities and costs of the following relapse- and overdose-associated events were derived from observational studies:
- Emergency services, Hospitalizations, Outpatient visits, Infections from intravenous drug use, Compulsory treatment, and lost work productivity. MAT acquisition / administration were not included for either group, but costs of supervision at MAT administration were included.

Results

- Annual per patient total costs were 29% lower for CAM2038 vs SL-BNX in the most conservative scenario (**Table 1**).
- 64% of cost-savings were attributable to reduced criminality and victimization, and reduced emergency and hospital services primarily drove direct-medical cost-savings, while lost productivity had a small influence due to the assumed low baseline employment rate.
- Outcomes were sensitive to how the frequency of on-treatment illicit opioid use triggered involuntary discharge from MAT.

Figure 1. Model Structure

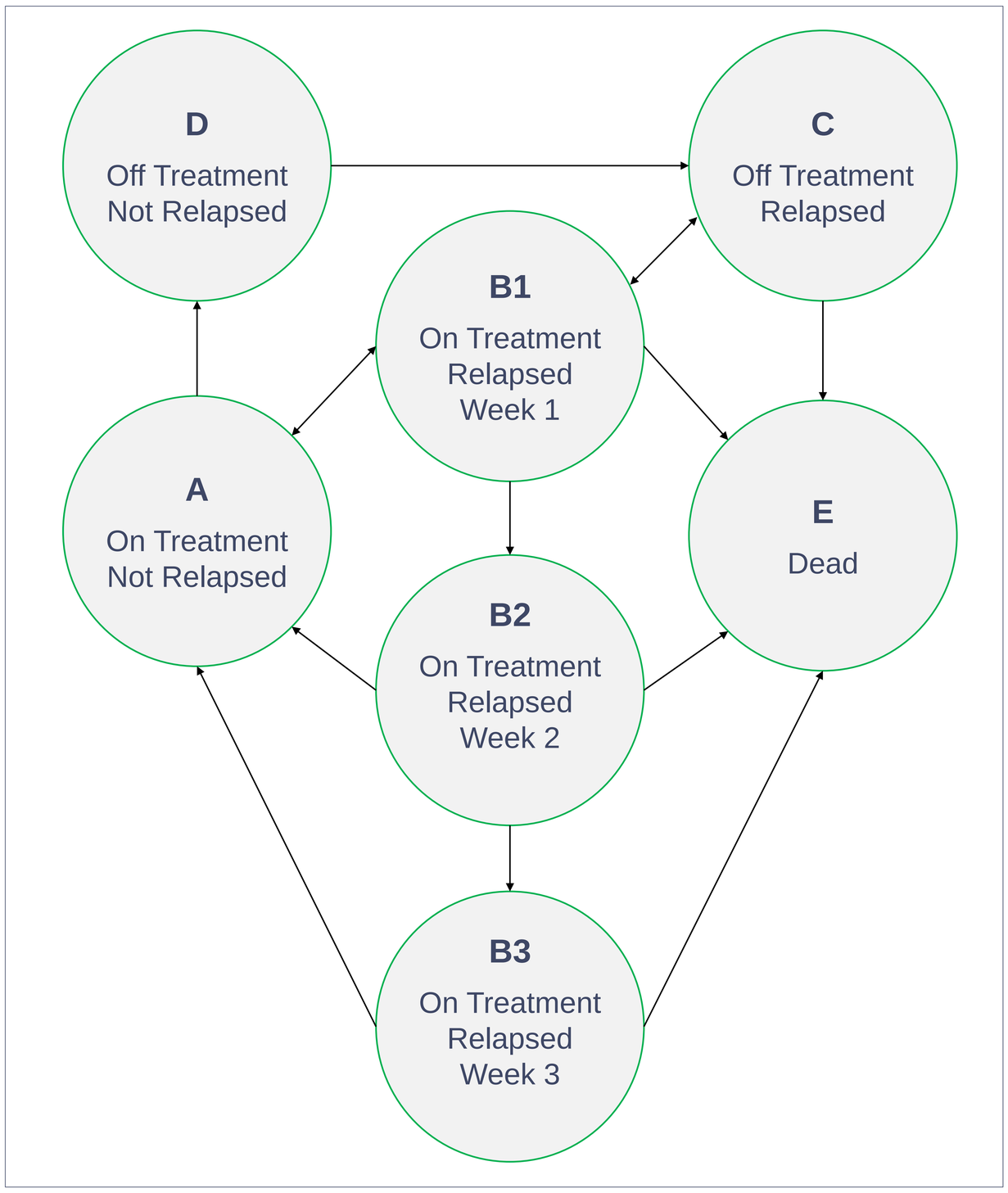

Table 1. Annual Costs Per Patient (SEK)

	CAM2038	SL-BNX	Difference
Total	**376,872**	**530,582**	**-153,710**
Medical	40,042	77,512	-37,470
Supervision	0	4,129	-4,129
Crime	313,105	411,582	-98,477
Other Societal	23,725	41,488	-17,763

Conclusions

- CAM2038 for MAT is estimated to reduce direct medical and societal costs in Sweden.
- The potential for CAM2038 to circumvent needs for supervised dosing was one important component of cost savings.
- Scenario analyses highlighted the large influence of autonomously defined rules for involuntary discharge.
- With around 3700 MAT patients in Sweden,[4] CAM2038 may result in substantial pharmacoeconomic benefits. In part these are driven by a high-risk heroin-dependent population and involuntary MAT discontinuations.

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