

## **Cost effectiveness of e-cigarettes vs nicotine replacement therapy for smoking cessation among NSW opiate agonist treatment clients**

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**Introduction:** Up to 94% of clients receiving opiate agonist treatment (OAT) smoke tobacco. The HARMONY randomized controlled trial found e-cigarettes more effective than nicotine replacement therapy (NRT) in helping OAT clients in New South Wales quit smoking. A cost-effectiveness analysis (CEA) was conducted to compare e-cigarettes and NRT as smoking cessation aids for individuals in substance use treatment. The results aim to guide future healthcare practices and inform public policy decisions.

**Methods:** Data were collected from 512 OAT participants randomized from six Local Health Districts in NSW, Australia. Participants received 12-weeks supply of either an e-cigarette kit or combination nicotine replacement therapy (NRT). The CEA was conducted from a health service perspective and considered at both 12-week and 24-week time horizons.

Costs included smoking cessation medications, clinical consultation and training materials. Outcomes were 7-day point prevalence abstinence (PPA) from tobacco at week 12 and 30-day PPA at week 24. The mean difference in abstinence outcomes between groups was used to calculate the incremental cost-effectiveness ratio (ICER).

**Results:** Over 12 weeks of treatment, NRT cost \$1,100 and e-cigarettes cost \$298 per participant. End-of-treatment abstinence was 12% for NRT and 24% for e-cigarettes. The e-

cigarette intervention was dominant, being more effective and less costly than NRT. Sensitivity analysis confirms the dominance, with e-cigarettes more effective and less costly across multiple assumptions and parameter variations.

**Discussions and Conclusions:** In addition to being more effective, there is compelling evidence that e-cigarettes are more cost-effective than NRT over 12- and 24-week periods for OAT clients wanting to stop smoking tobacco.

**Implications for Practice or Policy:** These results add to the body of evidence supporting e-cigarettes as an effective smoking cessation aid, particularly for priority populations. Australian policy makers should consider e-cigarettes as a cost-effective harm reduction strategy to assist current smokers wanting to quit.