

E-cigarettes: how they can support a smokefree future in mental health services

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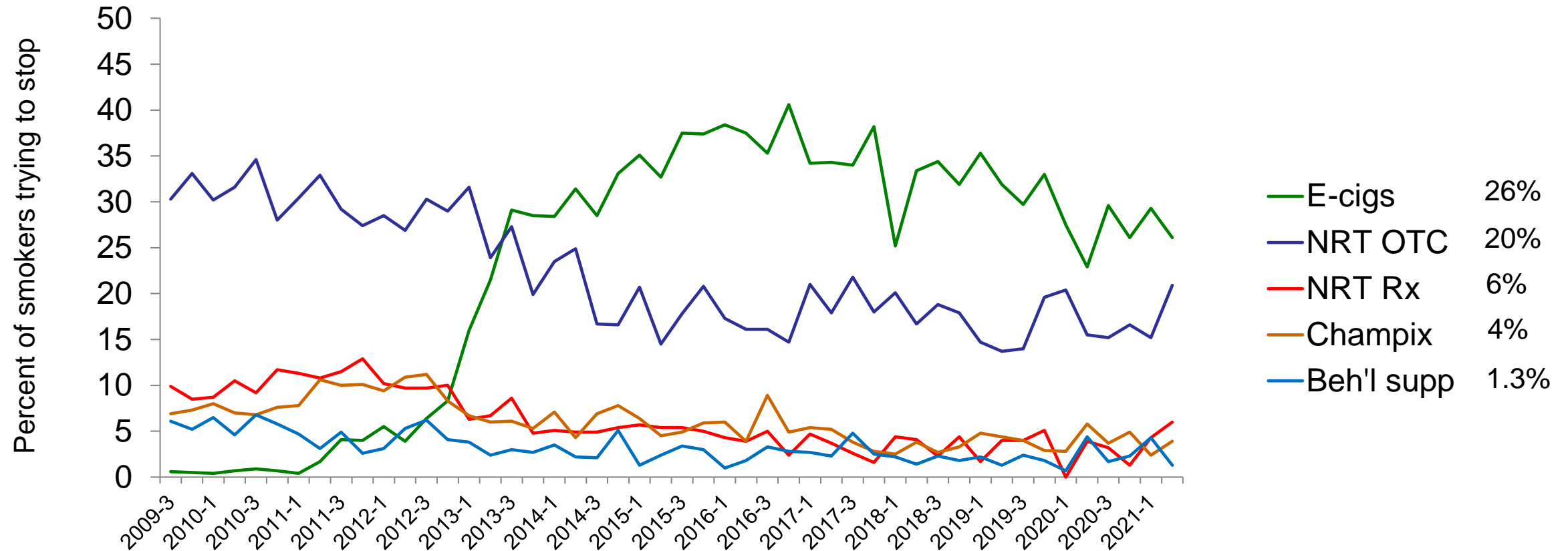
EC support smokefree mental health services in several ways

- More popular and have greater reach than NRT and varenicline
- Help people to quit smoking
- Reduce withdrawal symptoms – less discomfort and enables people to focus on mental health recovery
- Reduce exposure to harmful toxins compared with smoking – less harmful than smoking
- Depending on the type of EC allowed and policy – reduce fires
- But still need to overcome several challenges



Aids used in most recent quit attempt

(general population household survey)



N=17149 adults who smoke and tried to stop or who stopped in the past year; method is coded as any (not exclusive) use

Moderators of real-world effectiveness of smoking cessation aids: a population study


Vaping more common, so has far greater reach and therefore helps more people quit

Assessed the effectiveness of various stop smoking aids in 18,929 adults who smoked and made at least one quit attempt between 2006-2018

Unadjusted quit rates


Adjusted odds ratios

• 21%

E-cigarettes 


OR= 1.95,
95% (CI) = 1.69–2.24

• 20%

Varenicline 

OR= 1.82,
95% (CI) = 1.51–2.21

• 14.1%

Px NRT 

OR= 1.58,
95% (CI) = 1.25–2.1

- Did NOT increase chance of quitting
- NRT bought from a shop
 - Bupropion
 - Behavioural support
 - Telephone support
 - Written materials
 - Hypnotherapy

Electronic cigarettes for smoking cessation (Review)

Hartmann-Boyce J, McRobbie H, Lindson N, Bullen C, Begh R, Theodoulou A, Notley C, Rigotti NA, Turner T, Butler AR, Hajek P

61 studies (34 RCTs)
16, 759 participants

Common side effects – dry mouth, throat irritation , cough which reduced with continued use

Overall incidence of SAEs was low

‘We did not detect evidence of harm from nicotine EC, but longest follow-up was two years and the number of studies was small’

Nicotine EC vs Non-nicotine EC (placebo)

RR 1.94, 95% CI (1.21 to 3.13)

Moderate-certainty evidence

Nicotine EC vs **NRT**

RR 1.53, (95% CI 1.21 to 1.93)







Moderate-certainty evidence

Nicotine EC vs behavioural support

RR 2.61, 95% CI 1.41 to 4.74

Very low certainty (high risk of bias in studies)

E-cigarettes for smoking cessation in people who use mental health services (Research trial data)

	Caponnetto 2013	Pratt 2014	O'Brien 2014	Valentine 2018	Hickling 2019	Caponnetto* 2020
Diagnosis	Schizophrenia	Schizophrenia or bipolar	Px'd mental health meds	Dual diagnosis	Psychosis	Schizophrenia
Sample size	14	19	86	43	50	40
Motivated/ intent to quit	No	No	Yes	No	No	No
Device type	Rechargeable cigalike 	Refillable, rechargeable 	Rechargeable cigalike 	Refillable, rechargeable 	Disposable cigalike 	Rechargeable Pod 
Nicotine strength	7.5mg/ml	?	16mg/ml vs 0mg vs 21mg NRT patch	12/ 24/ 27mgs/ml	45mg/ml	50mg/ml
Quit rate (longest follow up)	14% (1yr)	10% (4 weeks)	6% (6mo)	7% (4 weeks)	7% (6 weeks)	40% (3 mo)

McNeill, Brose, Calder, Bauld & Robson (2020) Vaping in England – PHE Report

* Caponnetto et al (2021) NTR 23(4) DOI:[10.1093/ntr/ntab005](https://doi.org/10.1093/ntr/ntab005)

Common side effects – dry mouth, throat irritation, cough reduced with continued use. No adverse effect on mental health

Tobacco harm reduction

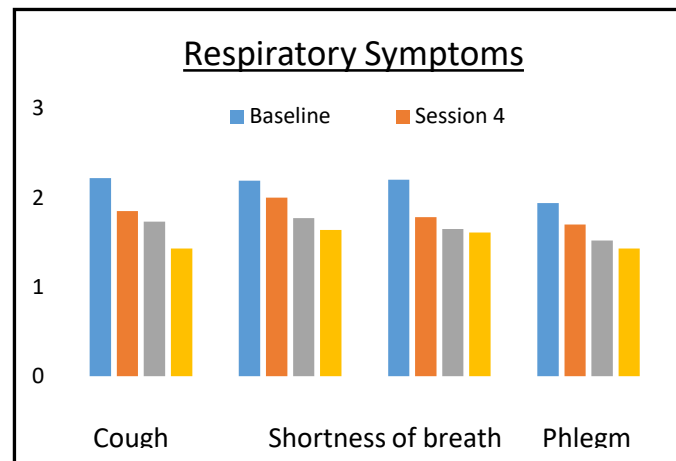
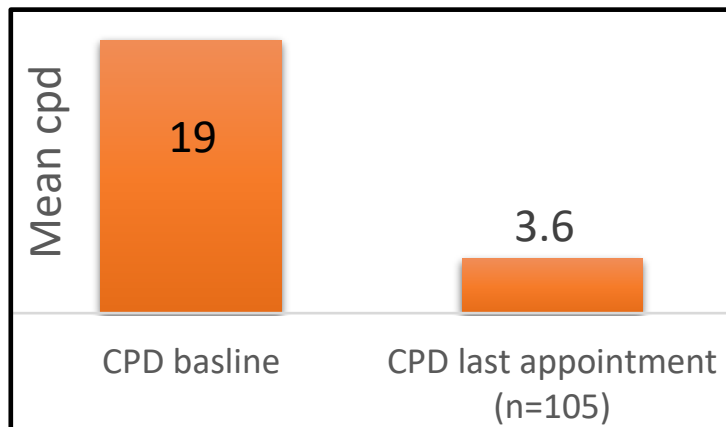


People accessing a drug and alcohol service in SLaM (n=124)

Offered a choice of NRT/ disposable, refillable or pod type device, nic strength (3-18mg/ml) and flavours + behavioural support from tobacco dependence treatment advisor for 12 weeks



Harm reduction outcomes



Significant reduction in respiratory symptoms by week 4

Found EC helpful/very helpful	Found NRT helpful/very helpful	A little or much more satisfying than cigarettes
69%	32%	32%



Significant reduction in urge to smoke after 1 week

Exposure to toxicants in EC users vs smokers



Original Investigation | Public Health

Comparison of Nicotine and Toxicant Exposure in Users of Electronic Cigarettes and Combustible Cigarettes

Maciej L. Goniewicz, PharmD, PhD; Danielle M. Smith, MPH; Kathryn C. Edwards, PhD; Benjamin C. Blount, PhD; Kathleen L. Caldwell, PhD; Jun Feng, PhD; Lanqing Wang, PhD; Carol Christensen, PhD; Bridget Ambrose, PhD; Nicolette Borek, PhD; Dana van Bommel, PhD; Karen Konkel, PhD; Gladys Erives, PhD; Cassandra A. Stanton, PhD; Elizabeth Lambert, MSc; Heather L. Kimmel, PhD; Dorothy Hatsukami, PhD; Stephen S. Hecht, PhD; Raymond S. Niaura, PhD; Mark Travers, PhD; Charles Lawrence, PhD; Andrew J. Hyland, PhD

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Nicotine, carcinogen and toxicant exposure in long-term e-cigarette and nicotine replacement therapy users: a cross-sectional study

Lion Shahab, PhD^{1,*}, Maciej L. Goniewicz, PhD², Benjamin C. Blount, PhD³, Jamie Brown, PhD⁴, Ann McNeill, PhD⁵, K. Udeni Alwis, PhD³, June Feng, PhD³, Lanqing Wang, PhD³, and Robert West, PhD¹

	USA (N=5105)	England (N=181 participants)
NNK/NNAL (carcinogens)	99% lower in vapers vs smokers	97% lower in vapers vs smokers
Volatile organic compounds	59-97% lower vapers vs smokers	97% lower in vapers vs smokers
NNK/NNAL (carcinogens)	23% lower in smokers vs dual users	Similar levels in smokers & dual users
Volatile organic compounds	10% -15% lower smokers vs dual users	Similar to higher levels

Recommendation - Dual use (concurrent vaping and smoking) should be discouraged and people should be advised to switch completely to EC (unless it's for a short period when people are in the process of switching). People who have never smoked should not start vaping



Article

Fire Incidents in a Mental Health Setting: Effects of Implementing Smokefree Policies and Permitting the Use of Different Types of E-Cigarettes

Debbie Robson ^{1,*}, Gilda Spaducci ¹, Ann McNeill ¹ , Mary Yates ², Melissa Wood ² and Sol Richardson ¹

Over 81 months: **90 fires**

(41 fires were caused by smoker's materials and 1 was caused by an e-cigarette)

200 false alarms

From 2012- Jan 2017 (Indoor and comp smokefree policy and only disposable EC allowed)

No significant effect on the rate of fires

Significant **reduction** in false fire alarms

Fires decreased by almost two thirds when there were fewer restrictions about the type of e-cigarettes allowed

But - significant **increase** in the monthly rate of **false alarms** by around two thirds

Indoor smokefree policy

Oct 2012- Sept 2014

Disposables only allowed

allowed on selected wards eg forensic wards

Comprehensive smokefree policy

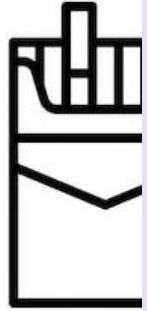
Oct 2014- Jan 2017

Disposables only allowed

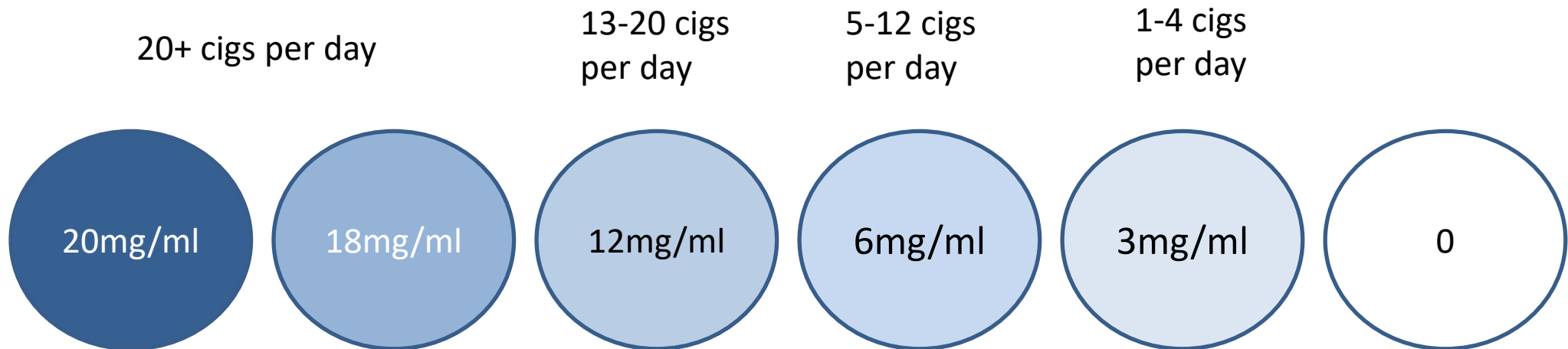
on all wards

Feb 2017- June 2019

All types allowed



Higher strength nicotine products are likely to be safer due to less exposure to other chemicals (e.g. flavours) - you won't vape as much if the nicotine dose is sufficient to saturate your nicotine receptors)



E-cigarettes have the potential to support a smokefree future in mental health services but.....

Challenges that need to be overcome e.g.

- Lack of national prevalence data of vaping (and smoking) among people who use MH services
- Underdosing of nicotine strength / or provided with poor nicotine delivery devices – increasing the risk of dual use
- Competence of the health workforce – knowledge and understanding of nicotine and e-cigarettes
- Lack of clear messaging across NHS – may improve with new NICE guidelines
- Lack of standardisation and consistency of EC policies across mental health services – inequitable access

These can be easily solved with leadership, systemisation, national guideline and workforce training

Thank you 😊

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