



HIQA HTA of Smoking Cessation findings and recommendations on E-Cigarettes

Patrick Moran, PhD

Senior Health Technology Assessment Analyst, HIQA

Senior Research Fellow in Health Economics, Trinity College Dublin

*Mobilising Communities towards a Tobacco Free Ireland
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Background to the HIQA HTA

Formal request from the Department of Health's
National Tobacco Control Advisor

- Recommendation in 2013 Tobacco Free Ireland report to examine the national and international evidence on the effects of interventions that support smokers to quit
- Synthesise evidence to support development of a national clinical guideline on smoking cessation

Research Partners

Expert Advisory Group

- Representatives from Department of Health, HSE Tobacco Free Ireland Programme, NCEC Guideline Development Group, Patient representatives, Nurse, GP, Consultant and Public Health experts, International experts on evidence synthesis and health economics

Public consultation on draft report

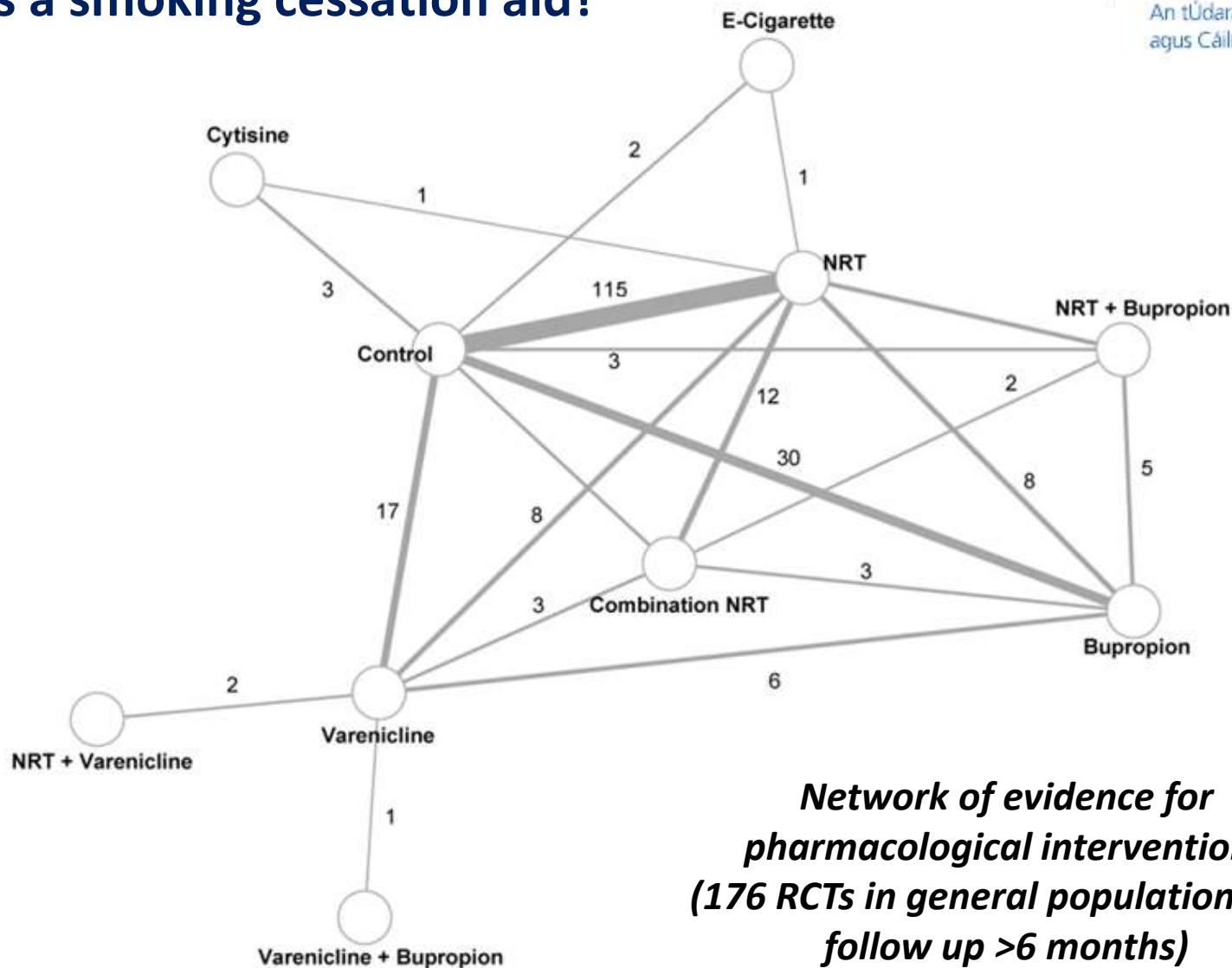
- 48 submissions (35 organisations, 13 individuals)

Scope of the HIQA HTA (abridged)

- Review evidence on the effect of smoking cessation interventions on long term quitting
- Assess the cost-effectiveness of these interventions
- Based on this assessment, advise on the optimal use of smoking cessation interventions in Ireland

[Not included: interventions applied at a population level, such as taxation, legislation, etc., and interventions to target initiation, quitting intention, relapse, or harm reduction]

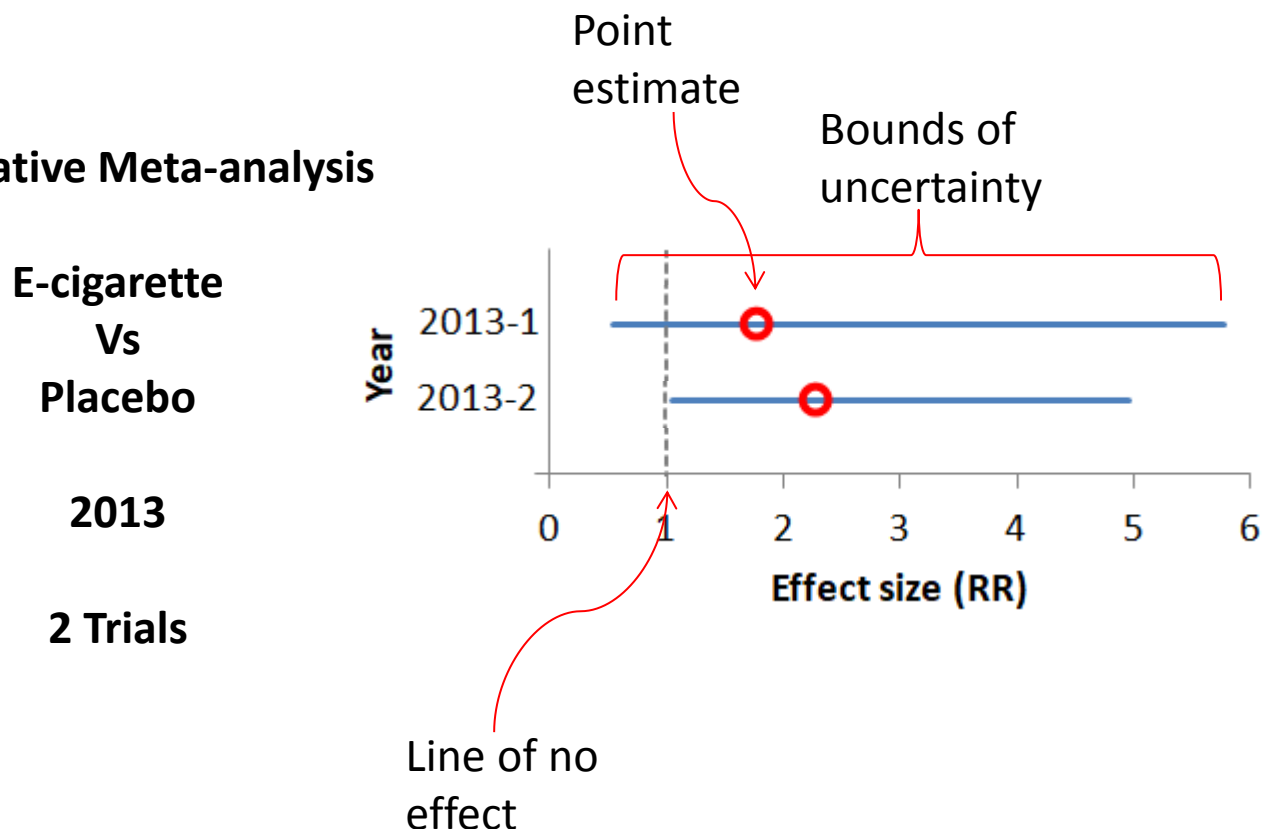
What does the research tell us about e-cigarette use as a smoking cessation aid?



Network of evidence for pharmacological interventions (176 RCTs in general population with follow up >6 months)

What does the research tell us about e-cigarette use as a smoking cessation aid?

Cumulative Meta-analysis

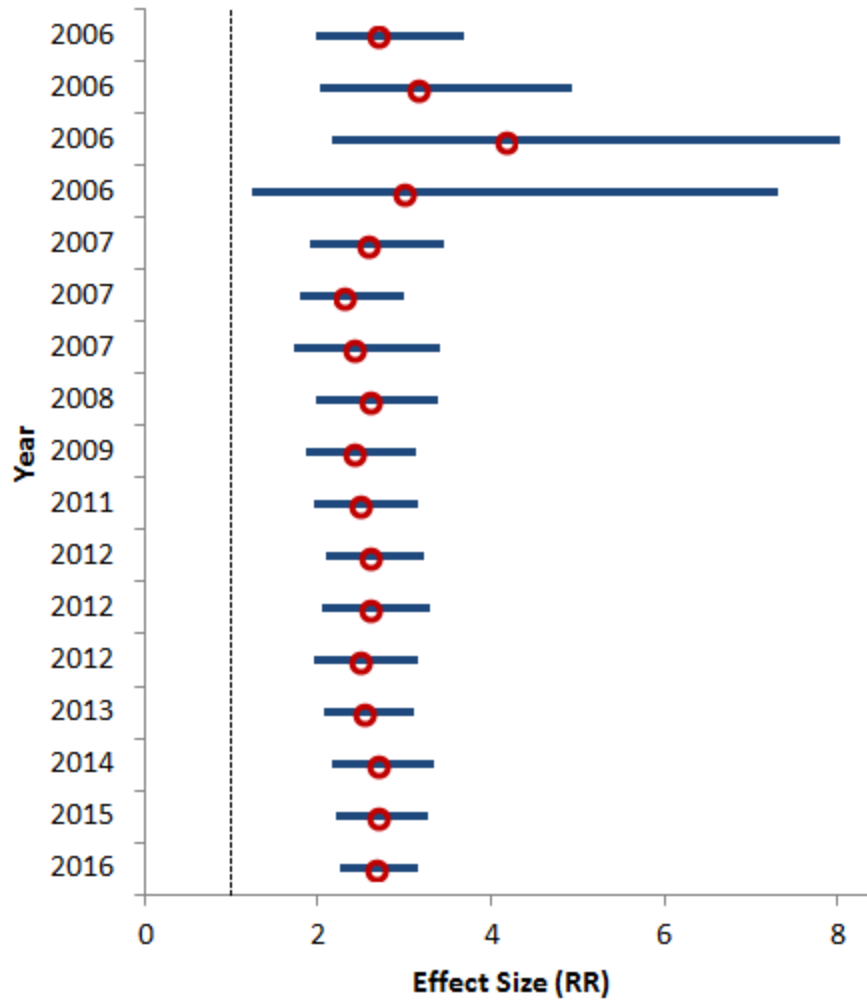


Cumulative Meta-analysis

Varenicline Vs Placebo

2006-2016

17 Trials

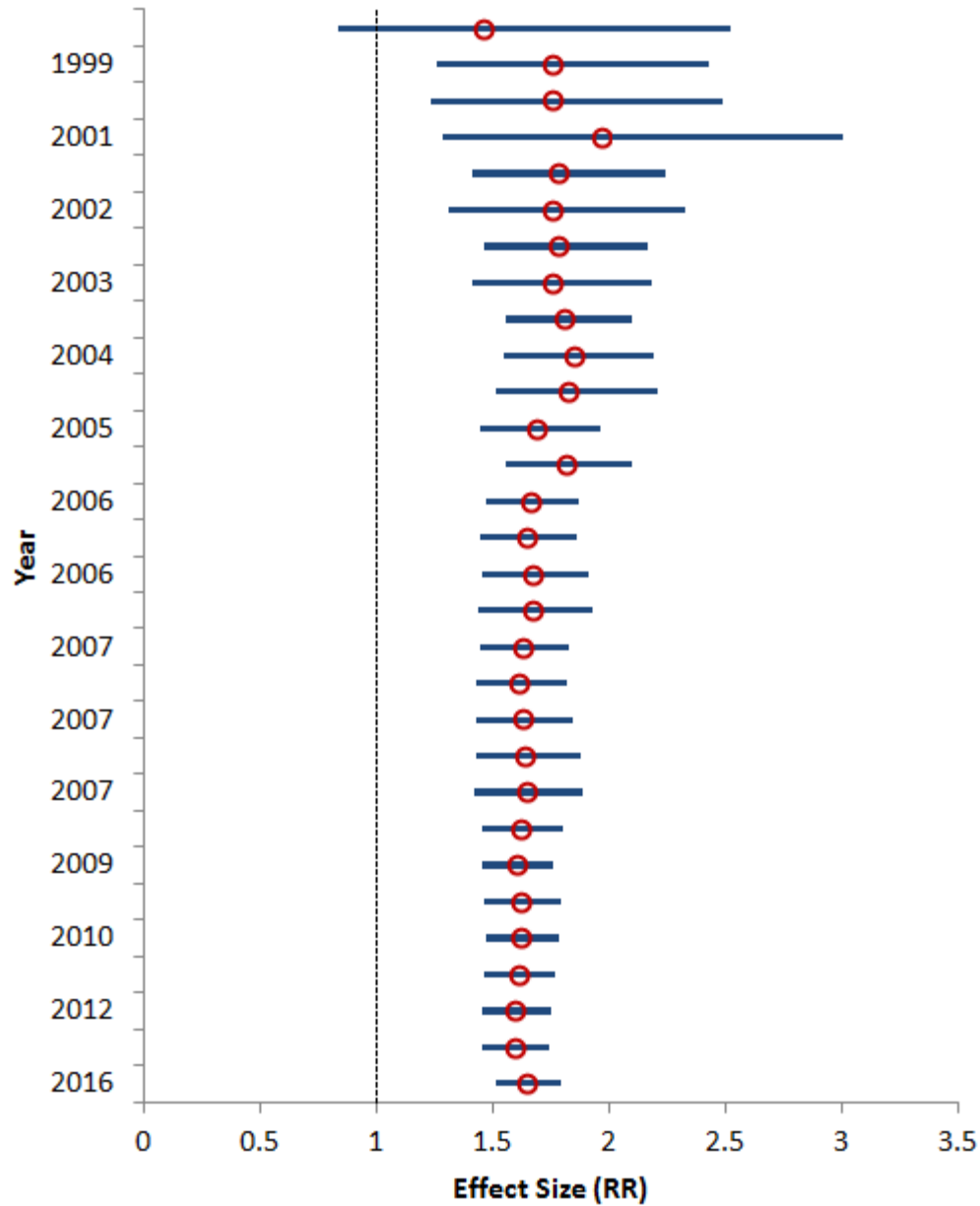


Cumulative Meta-analysis

Bupropion Vs Placebo

1997-2016

30 Trials

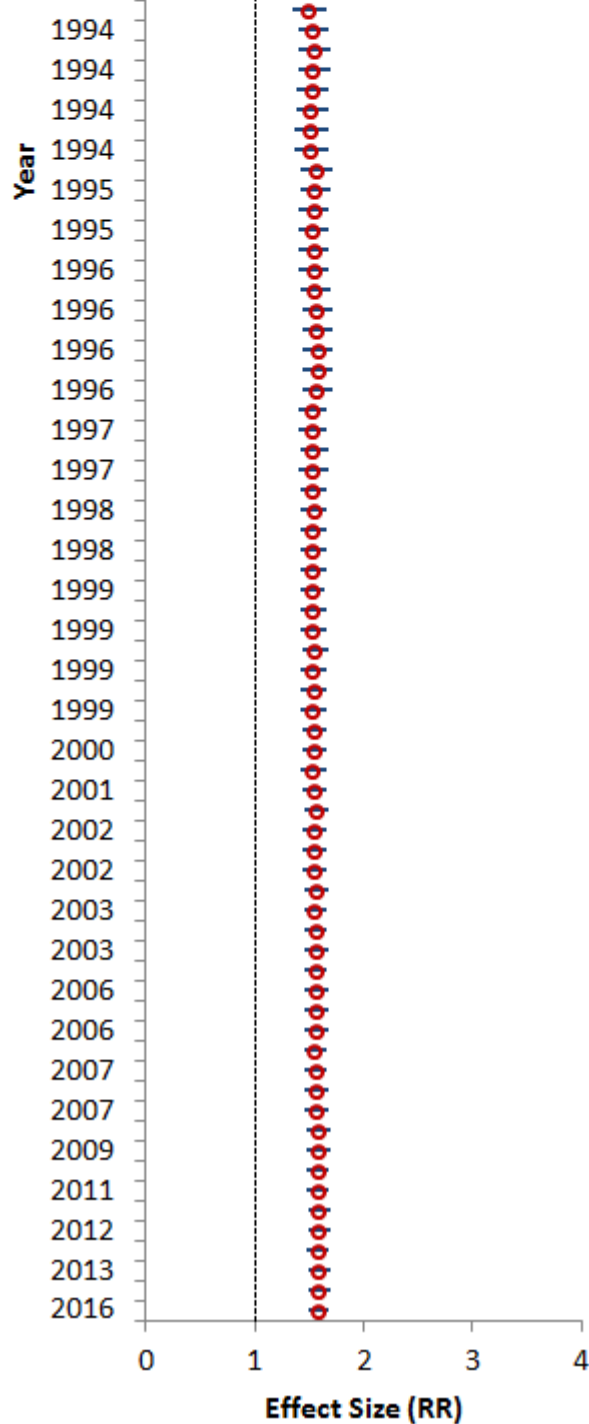


**Cumulative
Meta-analysis**

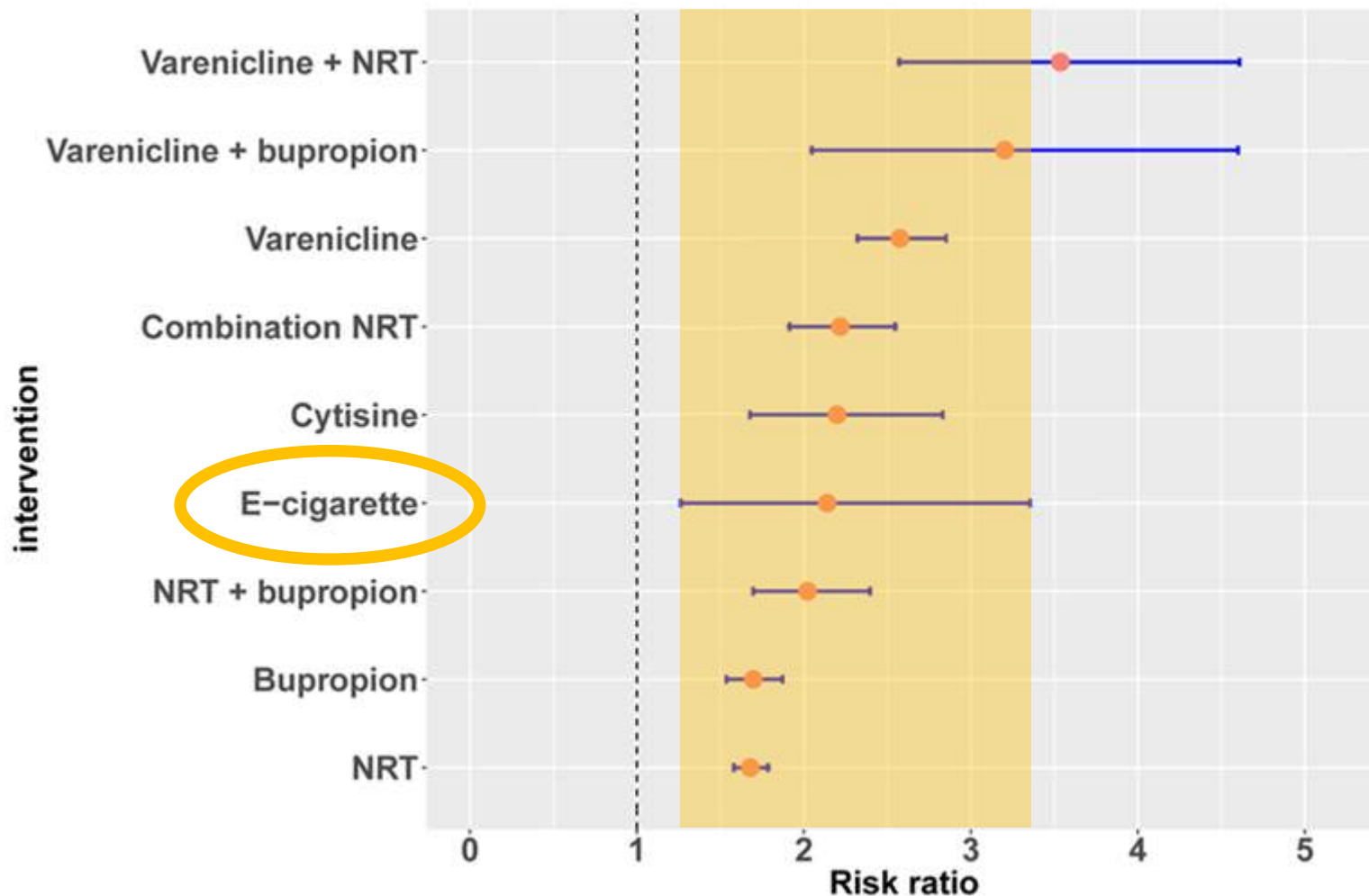
**NRT
Vs
Placebo**

1979-2016

115 Trials



What does the research tell us about e-cigarette use as a smoking cessation aid?



What does the research tell us about e-cigarette use as a smoking cessation aid?

Intervention	E-cigarettes versus unassisted	Varenicline versus e-cigarette
Incremental cost per additional quitter	€1,682	€2,043
Incremental cost per additional QALY	€5,249	€6,584

(QALY – Quality adjusted life year)

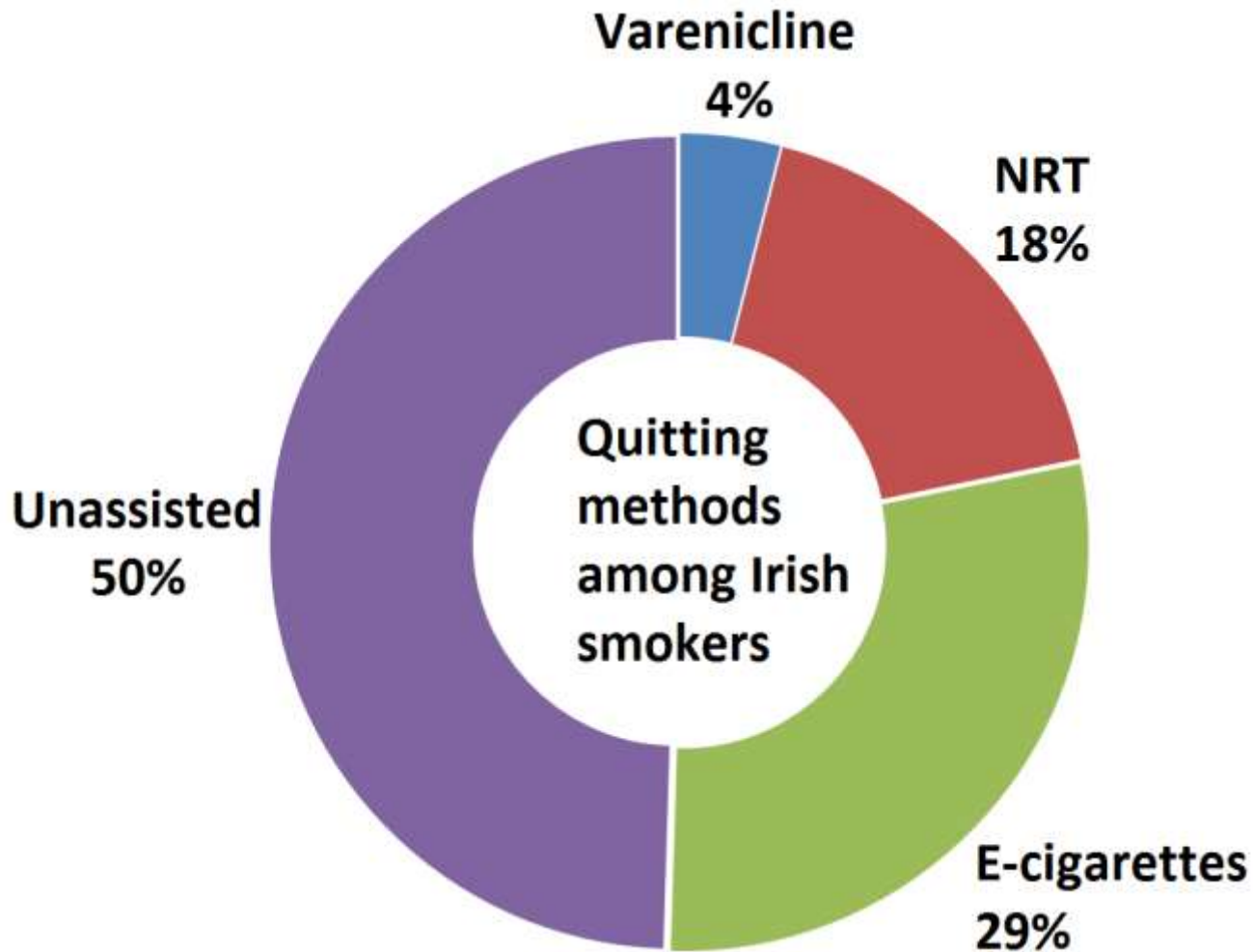
Willingness to pay threshold for a QALY in Ireland is €45,000

E-cigarettes are therefore not the most cost-effective option

What does the research tell us about e-cigarette use as a smoking cessation aid?

E-cigarettes - the same.. but different?

- Potential long term harms (individual & societal)
- Non-nicotine e-cigarettes as placebo
- Keeping pace with rapid product development
- Acceptability among smokers



HIQA HTA recommendations on e-cigarettes

“Although the currently available results for e-cigarettes are promising, there is insufficient evidence at present to reliably demonstrate their effectiveness.”

“In the absence of additional evidence confirming the effectiveness of e-cigarettes, HSE smoking cessation services should seek to promote the uptake of combination NRT treatment among those for whom varenicline is not suitable.”

Recent research

ADDICTION

How do we determine the impact of e-cigarettes on cigarette smoking cessation or reduction? Review and recommendations for answering the research question with scientific rigor

Andrea C. Villanti ✉, Shari P. Feirman, Raymond S. Niaura, Jennifer L. Pearson, Allison M. Glasser, Lauren K. Collins, David B. Abrams | 03 October 2017 | <https://doi.org/10.1111/add.14020>

Box 1: Hierarchy of methodological criteria for assessing EC use for smoking cessation/reduction

Criterion	Description
Criterion 1	Does the study examine and adequately measure the outcome of interest (cigarette smoking abstinence or reduction)?
Criterion 2	Does the study examine EC use specifically for smoking cessation or reduction as the exposure of interest (were EC specifically used with the intention to quit or reduce smoking?)
Criterion 3	Does the study use an appropriate design with control or comparison groups to address the potential impact of EC use on smoking cessation or reduction?
Criterion 4	Does the study measure EC use (exposure) before measuring smoking cessation or reduction (the final outcome)?
Criterion 5	Does the study evaluate the dose and duration of exposure, to determine adherence and adequate delivery of active ingredients for a sufficient time period?
Criterion 6	Does the study evaluate the type and quality of the EC product used?

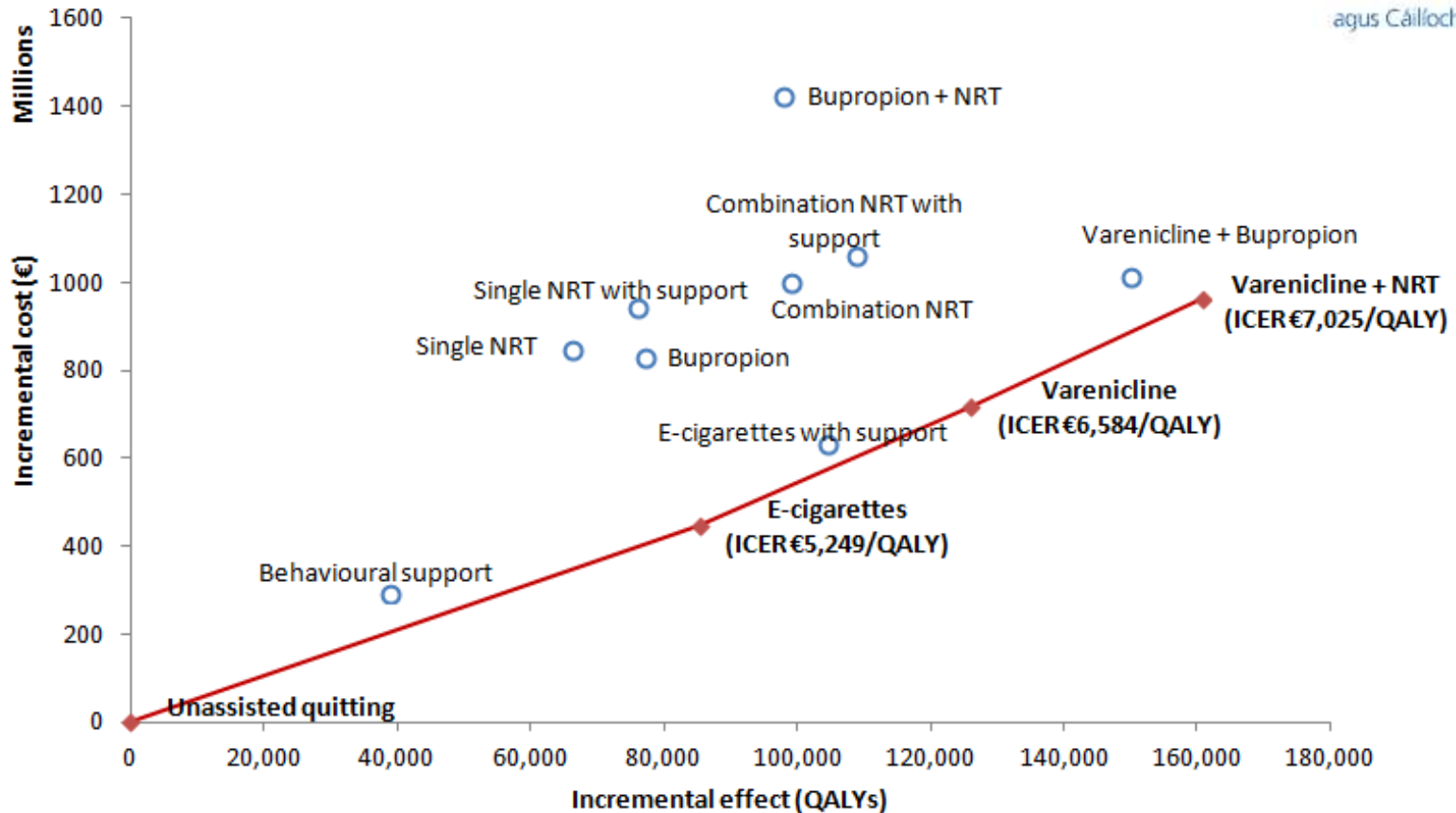
Thank you for your attention

Full report available to download @ www.hiqa.ie

pmoran@hiqa.ie

	Risk ratio (95% credible interval)								
	Control	Bupropion	Cytisine	E-cigarette	NRT	NRT + bupropion	NRT + varenicline	Combination NRT	Varenicline
Bupropion	1.70 (1.53 - 1.87)								
Cytisine	2.20 (1.68 - 2.83)	1.33 (0.97 - 1.81)							
E-cigarette	2.14 (1.26 - 3.35)	1.29 (0.72 - 2.20)	0.97 (0.49 - 1.80)						
NRT	1.68 (1.58 - 1.78)	0.99 (0.88 - 1.11)	0.73 (0.53 - 1.00)	0.76 (0.41 - 1.34)					
NRT + bupropion	2.02 (1.70 - 2.40)	1.21 (0.99 - 1.48)	0.91 (0.62 - 1.30)	0.94 (0.50 - 1.68)	1.23 (1.01 - 1.48)				
NRT + varenicline	3.54 (2.57 - 4.61)	2.33 (1.58 - 3.27)	1.80 (1.08 - 2.81)	1.86 (0.93 - 3.30)	2.35 (1.61 - 3.28)	1.96 (1.27 - 2.89)			
Combination NRT	2.22 (1.91 - 2.55)	1.35 (1.12 - 1.60)	1.01 (0.70 - 1.41)	1.04 (0.57 - 1.84)	1.36 (1.16 - 1.58)	1.11 (0.88 - 1.40)	0.53 (0.33 - 0.86)		
Varenicline	2.57 (2.32 - 2.85)	1.60 (1.39 - 1.84)	1.21 (0.87 - 1.65)	1.25 (0.69 - 2.13)	1.61 (1.43 - 1.83)	1.33 (1.06 - 1.65)	0.65 (0.42 - 0.99)	1.20 (0.99 - 1.44)	
Varenicline + bupropion	3.20 (2.05 - 4.60)	2.07 (1.22 - 3.25)	1.58 (0.85 - 2.75)	1.64 (0.75 - 3.20)	2.08 (1.24 - 3.27)	1.73 (0.98 - 2.86)	0.87 (0.43 - 1.69)	1.57 (0.90 - 2.61)	1.32 (0.77 - 2.18)

Cost effectiveness analysis comparing individual treatments to each other*



* Assuming all smokers make one quit attempt per year, all using a given intervention

Recent research

NICOTINE & TOBACCO RESEARCH

A Randomized Trial Comparing the Effect of Nicotine Versus Placebo Electronic Cigarettes on Smoking Reduction Among Young Adult Smokers

Tuo-Yen Tseng, MA, Jamie S Ostroff, PhD, Alena Campo, BS, Meghan Gerard, MPA, Thomas Kirchner, PhD, John Rotrosen, MD, Donna Shelley, MD, MPH

Nicotine & Tobacco Research, Volume 18, Issue 10, 1 October 2016, Pages 1937–1943,
<https://doi.org/10.1093/ntr/ntw017>

6 month sustained abstinence in smokers offered 5 different workplace incentive schemes

No difference between offering free e-cigarettes or free pharmacological treatment compared with usual care (information and text messages)

Short term follow up (3 weeks) of younger smokers (21-35) not ready to quit

E-cigarettes associated with decrease in cigarettes per day when adjusted for consumption and readiness to quit



A Pragmatic Trial of E-Cigarettes, Incentives, and Drugs for Smoking Cessation

Scott D. Halpern, M.D., Ph.D., Michael O. Harhay, Ph.D., Kathryn Saulsgiver, Ph.D., Christine Brophy, Andrea B. Troxel, Sc.D., and Kevin G. Volpp, M.D., Ph.D. May 23, 2018 DOI: 10.1056/NEJMsa1715757