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Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Martinez U, Simmons VN, Sutton SK, et al. Targeted smoking cessation for dual users of combustible and electronic cigarettes: a randomised controlled trial. *Lancet Public Health* 2021; **6:** e500–09.

Supplementary Appendix

Contents

A. TIDierR Checklist

Information to include when describing an intervention and the location of the information

Item number	Item	Where located **	
		Primary paper (page or appendix number)	Other † (Meltzer et al., 2017)
1.	**BRIEF NAME** Provide the name or a phrase that describes the intervention.	8	6
2.	**WHY** Describe any rationale, theory, or goal of the elements essential to the intervention.	8-9	3-4
3.	**WHAT** Materials: Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers. Provide information on where the materials can be accessed (e.g. online appendix, URL). Study materials can be accessed at https://moffitt.sharefile.com/share/view/s9b0c34f634e42898/fobd444c-860e-4108-aedb-d2479fae4e61	8-9	6
4.	**Procedures:** Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities.	8-10	6
5.	**WHO PROVIDED** For each category of intervention provider (e.g. psychologist, nursing assistant), describe their expertise, background and any specific training given.	NA	NA
6.	**HOW** Describe the modes of delivery (e.g. face-to-face or by some other mechanism, such as internet or telephone) of the intervention and whether it was provided individually or in a group.	9	6
7.	**WHERE** Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.	NA	NA
8.	**WHEN and HOW MUCH** Describe the number of times the intervention was delivered and over what period of time including the number of sessions, their schedule, and their duration, intensity or dose.	8-9	6
9.	**TAILORING** If the intervention was planned to be personalised, titrated or adapted, then describe what, why, when, and how.	8-9	3-4
10. ‡	**MODIFICATIONS** If the intervention was modified during the course of the study, describe the changes (what, why, when, and how).	NA	NA
11.	**HOW WELL** Planned: If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them.	NA	-
12. ‡	Actual: If intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned.	14	-

** **Authors** - use N/A if an item is not applicable for the intervention being described. **Reviewers** – use '?' if information about the element is not reported/not sufficiently reported.

† Meltzer L, Simmons VN, Sutton SK, et al. A randomized controlled trial of a smoking cessation self-help intervention for dual users of tobacco cigarettes and e-cigarettes: intervention development and research design. *Contemp Clin Trials* 2017; **60:** 56-62.

B. Link to Intervention Materials

Link to intervention materials for GENERIC (Stop Smoking for Good) and eTARGET (If you Vape) intervention arms: https://moffitt.sharefile.com/share/view/s9b0c34f634e42898/fobd444c-860e-4108-aedb-d2479fae4e61

C. Consort Checklist

CONSORT 2010 checklist of information to include when reporting a randomised trial*

Section/Topic	Item No	Checklist item	Reported on page No
Title and abstract			
	1a	Identification as a randomised trial in the title	1
	1b	Structured summary of trial design, methods, results, and conclusions	4-5
Introduction			
Background and objectives	2a	Scientific background and explanation of rationale	6-7
	2b	Specific objectives or hypotheses	6-7
Methods			
Trial design	3a	Description of trial design (such as parallel, factorial) including allocation ratio	7
	3b	Important changes to methods after trial commencement (such as eligibility criteria), with reasons	7, 11
Participants	4a	Eligibility criteria for participants	7-8
	4b	Settings and locations where the data were collected	7
Interventions	5	The interventions for each group with sufficient details to allow replication, including how and when they were actually administered	8-9
Outcomes	6a	Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed	10
	6b	Any changes to trial outcomes after the trial commenced, with reasons	NA
Sample size	7a	How sample size was determined	11
	7b	When applicable, explanation of any interim analyses and stopping guidelines	NA
Randomisation:			
Sequence generation	8a	Method used to generate the random allocation sequence	10
	8b	Type of randomisation; details of any restriction (such as blocking and block size)	10
Allocation concealment mechanism	9	Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned	10-11
Implementation	10	Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions	8, 10
Blinding	11a	If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how	NA
	11b	If relevant, description of the similarity of interventions	8-9
Statistical methods	12a	Statistical methods used to compare groups for primary and secondary outcomes	11-12
	12b	Methods for additional analyses, such as subgroup analyses and adjusted analyses	12-13
Results			
Participant flow (a diagram is strongly recommended)	13a	For each group, the numbers of participants who were randomly assigned, received intended treatment, and were analysed for the primary outcome	13, Fig.1
	13b	For each group, losses and exclusions after randomisation, together with reasons	13, Fig.1
Recruitment	14a	Dates defining the periods of recruitment and follow-up	13
	14b	Why the trial ended or was stopped	NA
Baseline data	15	A table showing baseline demographic and clinical characteristics for each group	Table 1
Numbers analysed	16	For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups	13-16
Outcomes and estimation	17a	For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)	14-16
	17b	For binary outcomes, presentation of both absolute and relative effect sizes is recommended	NA
Ancillary analyses	18	Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified from exploratory	Appendix
Harms	19	All important harms or unintended effects in each group	NA
Discussion			
Limitations	20	Trial limitations, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses	19
Generalisability	21	Generalisability (external validity, applicability) of the trial findings	19
Interpretation	22	Interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence	16-19
Other information			
Registration	23	Registration number and name of trial registry	4, 13
Protocol	24	Where the full trial protocol can be accessed, if available	7
Funding	25	Sources of funding and other support (such as supply of drugs), role of funders	5, 13, 21

*We strongly recommend reading this statement in conjunction with the CONSORT 2010 Explanation and Elaboration for important clarifications on all the items. If relevant, we also recommend reading CONSORT extensions for cluster randomised trials, non-inferiority and equivalence trials, non-pharmacological treatments, herbal interventions, and pragmatic trials. Additional extensions are forthcoming: for those and for up to date references relevant to this checklist, see www.consort-statement.org.

D. Biochemical Verification of Subsample

Biochemical verification of smoking status for the entire sample was not feasible for this study in which participants were recruited from throughout the United States. Thus, we followed the recommendations of Benowitz et al. for large population, low-intensity intervention trials.[1,2] To obtain a rough estimate of false reporting of smoking abstinence, participants reporting abstinence at 12 or 24 months and living within 100 miles of the research site were invited to attend an in-person interview. At this interview, self-reported smoking status was confirmed and participants were then asked to provide biochemical samples, including breath carbon monoxide (CO), which was measured using the Micro CO™ (Micro Direct, Inc.), and a saliva sample for cotinine analysis. For the current analyses, smoking abstinence was confirmed with a CO cut-off of 8ppm.[3] Participants were not aware in advance of the interview that they would be asked for biosamples, and new informed consent was obtained at that time. Participants received $20 for completing a biochemical verification interview and $15 for providing biosamples.

At the time of enrollment, 188 participants lived within 100 miles of the institution. At the 12-month assessment, 47 qualified for the biochemical verification assessment, 29 completed the test (3 declined, and the others were either unreachable or unable to attend), and 23 (79%) met the CO criterion for abstinence verification. At the 24-month assessment, 49 participants qualified, 29 completed the test (7 declined), and 27 (93%) met the CO criterion. These findings suggest that the raw abstinence rates reported in the results might be inflated by 10-20%.

References

1. Benowitz N, Jacob P, Ahijevych K, et al. Biochemical verification of tobacco use and cessation. *Nicotine Tob Res* 2002; 4: 149-159.
2. Benowitz NL, Bernet JT, Foulds J, et al. Biochemical verification of tobacco use and abstinence: 2019 update. *Nicotine Tob Res* 2020; 22: 1086-1097.3. SRNT Subcommittee on Biochemical Verification. Biochemical verification of tobacco use and cessation. *Nic Tob Res* 2002; **4**: 149-159.
3. SRNT Subcommittee on Biochemical Verification. Biochemical verification of tobacco use and cessation. *Nic Tob Res* 2002; 4: 149-159.

E. Multiple Imputation Addendum

Missing data were predominantly due to unreturned follow-up surveys. For those surveys that were returned, the amount of missing data was less than 1% for the variables used in these analyses. Missing data were managed using multiple imputation with the multivariate normal approach under the Missing at Random assumption.[1,2] All imputation models included intervention group (coded ASSESS=0, GENERIC=1, and eTARGET=2) and the outcome measures (e.g., 7-day point prevalence smoking and vaping status) for each of the eight assessments. Imputation models also included pre-specified moderators (e.g., sex, age) and the interaction term of the moderator with intervention. Finally, the imputation models included auxiliary variables to increase the credibility of the Missing at Random assumption. These variables were identified via preliminary univariate and multivariable logistic regression analyses. Candidates were baseline measures, which had very little missing data, that predicted smoking status at multiple follow-up assessments and/or predicted unreturned surveys. Following the imputation modeling, a post hoc adjustment was applied to imputed smoking status values to reflect missing implies smoking with a small-medium effect size (i.e., Cohen's d = 0·35).[1] The final smoking and vaping imputed values were dichotomized using adaptive rounding. Twenty data sets were generated.

The multivariate normal method was applied for several reasons. First, the primary outcome measures (point prevalence) are binary, predictor variables that are ordinal can be dichotomized, and categorical variables of interest can be dichotomized to focus on a single level (e.g., marital status dichotomized to married versus other). Several auxiliary variables that predict either missing follow-up surveys or smoking status at follow-ups can be identified. This includes prospective moderators, which are already part of the imputation model. Third, there typically are many patterns of missing data with the numerous follow-up surveys (e.g., 238 missing data patterns for the primary imputation model presented below). Whereas some participants may stop returning any survey after a specific assessment, many will return later surveys after not returning an earlier follow-up.

The primary imputation model was intended to cover all possible analyses involving 7-day point prevalence for smoking status (primary outcome) and 7-day point prevalence for vaping status (a secondary outcome). This approach provides imputed data sets that would be the same for multiple planned and post hoc analyses using a subset of the variables from the more complete data sets created by the imputation models (in contrast to performing imputation modeling that is unique to an analysis). This model included intervention group, the 16 variables representing smoking and vaping status at each follow-up assessment (e.g., 7-day abstinence at 3 months), the pre-specified moderators (sex, age, education, income, FTND at baseline, HSI pre-vaping, and planning to quit within 30 days), auxiliary variables that predicted missing surveys (i.e., survey type), auxiliary variables that predicted smoking status at follow-up assessments (i.e., married/living together, non-Hispanic White versus minority, commitment, ARME, SSE, when started vaping, vaping days/week, and vaping events/day), and variables representing the interaction of a moderator or auxiliary variable with intervention group.

Separate imputation models were performed for 30-day and 90-day point prevalent smoking status because the determination of 30-day and 90-day point prevalence was not as reliable as for 7-day. If an individual who returned a follow-up survey was determined to be 7-day point prevalent smoking, then 30-day and 90-day point prevalence was also smoking. However, 7-day point prevalence abstinence required information from additional survey items to determine 30-day and 90-day point prevalence. When this information was insufficient for determination, the 30-day and 90-day smoking status was set to missing and subject to multiple imputation. For consistency, the imputation models used the same moderator and auxiliary variables as for 7-day point prevalence.

One index of the quality/sufficiency of the imputation modeling using the multivariate normal method is the relative efficiency. The higher the value (max=1), the greater the efficiency. This can be applied to individual analyses. It was used here as measure of the imputation modeling based on a single-sample t-test of the variable mean against 0. Relative efficiency values were very good for all variable across all imputation models, with all values greater than 0·98 for the primary imputation model and greater than 0·975 for the models for 30-day and 90-day point prevalence.

References

1. Rubin D. Multiple imputation for nonresponse in surveys. New York, NY: John Wiley & Sons, 1987.
2. Schafer JL. Analysis of incomplete multivariate data. London: Chapman and Hall, 1997.

F. Statistical Analysis Addendum

Generalized estimating equations (GEE) were used to fit population-averaged models to handle the longitudinally measured binary outcomes. Given that the primary outcome (7-day point prevalence abstinence) is a snapshot of abstinence rates at approximately 3-month intervals; a longitudinal analysis permits the evaluation of intervention effects over a collection of assessments, rather than at a single time point. This approach is an excellent match with both the nature of smoking cessation attempts (possible fluctuations between abstinence and smoking within an individual) and the two interventions with self-help material on quitting, preventing relapse, and how to manage a lapse. In addition, this study did not require participants to be interested in quitting smoking, which increases the likelihood of individual variation in smoking status over the study period.

The main covariates were intervention group, assessment (months from baseline), and their interaction. It was unclear as to whether or not the trajectory of abstinence rates would be modeled well using a linear function for month since baseline. Therefore, assessment was entered into the model as a class variable with the first assessment as the reference (typically, 3 months). The models used the logit link function and a first-order auto correlation for the working correlation structure with the coefficient equal to 0·70. The χ^2 test statistic was used to evaluate the model variables. The χ^2 is generated for each covariate (e.g., eTARGET v ASSESS) in the model for each of the 20 data sets generated by multiple imputation. These values for a single covariate are pooled and analyzed to generate a single test statistic and p-value for the covariate taking into account the number of data sets and the magnitude of variation among the χ^2 values across the data sets. Allison's 'combchi.sas' macro[1] was applied to compute r (an index of test statistic variability), the F-ratio, adjusted denominator degrees of freedom, and p-value.

Given the primary aims were to evaluate the targeted intervention against the assessment only and the generic intervention, GEE models were performed for each of the three possible paired comparisons of the study arms: eTARGET v ASSESS, eTARGET v GENERIC, and GENERIC v ASSESS. It was hypothesized that eTARGET would produce higher abstinence rates over the course of the study. Therefore, the initial GEE model for each paired comparison include all eight assessments (3-24 months). More specific models evaluated group differences over the six assessments during eTARGET and GENERIC treatment (3-18 months) as well as the two assessments post-treatment (21-24 months). Following the Holm method[2], α was set at 0·167 for eTARGET v ASSESS, 0·25 for GENERIC v ASSESS, and 0·05 for eTARGET v GENERIC in order of largest to smallest difference in abstinence rates as expressed by an odds ratio. All other statistical tests (e.g., moderators) were evaluated at α=0·05.

Separate analyses were performed for the outcomes of interest. Seven-day point prevalence smoking abstinence was the primary outcome variable. Secondary outcomes were 30-day and 90-day point prevalence smoking abstinence to evaluate more sustained abstinence; and 7-day point prevalence vaping abstinence to evaluate the targeted intervention on vaping cessation. To evaluate the ten prospective moderators of the targeted intervention (versus assessment only), a separate GEE model evaluated the moderator over all assessment points by adding the moderator and its interaction with intervention group to the base model.

Finally, a different GEE model was used to evaluate the association between 7-day point prevalence vaping status on concurrent 7-day point prevalence smoking abstinence across all assessments. The covariates were treatment group (all three arms coded ASSESS=0, GENERIC=1, and eTARGET=2 based on relative abstinence rates), assessment (3-24 months), time-varying vaping status (7-day point prevalence), and the interaction of vaping status and group. A significant main effect of vaping status would suggest an influence. A significant interaction of vaping status and group would warrant assessment of a reduced model within each group.

References

1. Allison PD. https://www.sas.upenn.edu/~allison/combchi.sas
2. Holm S. A simple sequentially rejective multiple test procedure. Scand J Stat 1979; 6: 65–70.

G. Supplementary Table 1: 7-, 30-, and 90-day Point Prevalence Smoking Abstinence Rates

7-day Point Prevalence Smoking Abstinence								
ALL PARTICIPANTS	**3 M**	**6 M**	**9 M**	**12M**	**15M**	**18 M**	**21 M**	**24 M**
ASSESS	10·6%	17·8%	21·7%	26·9%	29·7%	33·2%	38·7%	40·0%
eTARGET	15·5%	22·4%	28·5%	32·3%	35·4%	38·4%	39·1%	42·3%
GENERIC	14·9%	20·6%	25·4%	29·9%	33·2%	36·6%	39·7%	42·2%
RESPONDERS ONLY	**3 M**	**6 M**	**9 M**	**12M**	**15M**	**18 M**	**21 M**	**24 M**
ASSESS	11·7%	20·4%	25·9%	31·7%	35·9%	37·8%	46·5%	46·3%
eTARGET	17·3%	26·0%	35·0%	40·6%	43·4%	46·5%	48·1%	48·9%
GENERIC	17·5%	24·4%	31·7%	36·7%	41·8%	44·6%	49·3%	50·2%
MISSING=SMOKING	**3 M**	**6 M**	**9 M**	**12M**	**15M**	**18 M**	**21 M**	**24 M**
ASSESS	9·0%	15·0%	16·9%	19·7%	19·8%	21·9%	25·2%	29·0%
eTARGET	12·6%	16·7%	19·4%	21·1%	20·5%	22·1%	21·9%	26·8%
GENERIC	12·0%	15·1%	17·4%	18·8%	19·8%	20·9%	22·3%	27·0%
30-day Point Prevalence Smoking Abstinence								
ALL PARTICIPANTS	**3 M**	**6 M**	**9 M**	**12 M**	**15 M**	**18 M**	**21 M**	**24 M**
ASSESS	5·4%	11·3%	16·0%	21·3%	23·8%	27·1%	30·8%	34·8%
eTARGET	8·2%	13·9%	20·6%	23·2%	29·2%	31·8%	32·3%	36·7%
GENERIC	7·3%	12·3%	17·4%	21·8%	28·0%	30·1%	32·0%	34·8%
RESPONDERS ONLY	**3 M**	**6 M**	**9 M**	**12 M**	**15 M**	**18 M**	**21 M**	**24 M**
ASSESS	5·8%	13·1%	19·3%	25·2%	29·3%	30·7%	37·2%	40·7%
eTARGET	9·3%	16·3%	25·7%	30·0%	36·1%	40·0%	40·6%	43·8%
GENERIC	8·6%	14·8%	22·1%	27·2%	36·7%	37·5%	41·1%	42·0%
MISSING=SMOKING	**3 M**	**6 M**	**9 M**	**12 M**	**15 M**	**18 M**	**21 M**	**24 M**
ASSESS	4·5%	9·6%	12·5%	15·7%	16·2%	17·7%	20·2%	25·6%
eTARGET	6·8%	10·5%	14·2%	15·5%	17·1%	19·0%	18·5%	24·1%
GENERIC	5·9%	9·1%	12·1%	14·0%	17·3%	17·5%	18·5%	22·5%
90-day Point Prevalence Smoking Abstinence								
ALL PARTICIPANTS	**3 M**	**6 M**	**9 M**	**12 M**	**15 M**	**18 M**	**21 M**	**24 M**
ASSESS	2·4%	7·0%	12·6%	16·3%	19·4%	22·5%	23·9%	29·1%
eTARGET	3·0%	10·1%	14·8%	19·4%	24·7%	27·3%	28·1%	32·4%
GENERIC	2·1%	7·3%	12·1%	17·5%	22·3%	25·0%	27·2%	30·8%
RESPONDERS ONLY	**3 M**	**6 M**	**9 M**	**12 M**	**15 M**	**18 M**	**21 M**	**24 M**
ASSESS	2·7%	8·1%	15·5%	19·6%	24·2%	26·8%	29·2%	34·4%
eTARGET	3·4%	11·9%	18·4%	25·2%	31·4%	34·8%	35·9%	38·8%
GENERIC	2·5%	8·6%	15·5%	22·2%	29·7%	32·1%	36·3%	38·3%
MISSING=SMOKING	**3 M**	**6 M**	**9 M**	**12 M**	**15 M**	**18 M**	**21 M**	**24 M**
ASSESS	2·1%	5·9%	10·1%	12·2%	13·4%	15·5%	15·8%	21·6%
eTARGET	2·5%	7·6%	10·2%	13·0%	14·8%	16·5%	16·4%	21·3%
GENERIC	1·7%	5·3%	8·5%	11·4%	14·0%	15·0%	16·4%	20·5%

Notes: All participants (N = 2896) is based on data from 20 data sets following multiple imputation.
Responders Only is based on the participants who returned at least one follow-up assessment (n = 2393).
Sample size varies by month (e.g., 18-month n = 1,428; 24-month n = 1622).
Missing = Smoking (N = 2896) is based on all participants, whereby missing smoking status was imputed as smoking.
Abbreviations: M = Month of assessment, ASSESS = Assessment Only, eTARGET = Forever Free: E-Target, GENERIC = Forever Free: Generic

H. Supplementary Table 2: Analyses of 7-, 30-, and 90-day Point Prevalence Smoking Abstinence Rates by Assessment Period

7-day Point Prevalence Smoking Abstinence			
ALL PARTICIPANTS	**All Assessments (3 M to 24 M)**	**Treatment (3 M to 18 M)**	**Post-treatment (21 & 24 M)**
eTARGET v ASSESS	0·16, 7·27, 955·8, 0·0071	0·16, 10·20, 973·8, 0·0014	0·31, 0·27, 333·3, 0·60
eTARGET v GENERIC	0·14, 1·05, 1271·4, 0·31	0·15, 1·79, 1102·5, 0·18	0·14, 0·17, 1234·3, 0·68
GENERIC v ASSESS	0·15, 3·53, 1071·3, 0·061	0·20, 4·29, 676·7, 0·039	0·33, 0·36, 304·8, 0·55
RESPONDERS ONLY	**All Assessments (3 M to 24 M)**	**Treatment (3 M to 18 M)**	**Post-treatment (21 & 24 M)**
eTARGET v ASSESS	11·97, 0·0005	15·93, <0·0001	0·84, 0·36
eTARGET v GENERIC	0·93, 0·34	1·88, 0·17	0·12, 0·72
GENERIC v ASSESS	7·53, 0·0061	9·02, 0·0027	1·34, 0·25
MISSING=SMOKING	**All Assessments (3 M to 24 M)**	**Treatment (3 M to 18 M)**	**Post-treatment (21 & 24 M)**
eTARGET v ASSESS	0·45, 0·50	1·80, 0·18	1·90, 0·17
eTARGET v GENERIC	0·74, 0·39	1·36, 0·24	0·03, 0·86
GENERIC v ASSESS	0·00, 0·97	0·15, 0·70	1·52, 0·22
30-day Point Prevalence Smoking Abstinence			
ALL PARTICIPANTS	**All Assessments (3 M to 24 M)**	**Treatment (3 M to 18 M)**	**Post-treatment (21 & 24 M)**
eTARGET v ASSESS	0·16, 4·83, 970·5, 0·028	0·20, 5·82, 682·6, 0·016	0·23, 0·51, 543·8, 0·48
eTARGET v GENERIC	0·16, 1·53, 948·3, 0·22	0·19, 1·74, 727·1, 0·19	0·28, 0·31, 403·0, 0·58
GENERIC v ASSESS	0·21, 1·34, 645·7, 0·25	0·21, 1·78, 651·2, 0·18	0·12, 0·19, 1620·1, 0·66
RESPONDERS ONLY	**All Assessments (3 M to 24 M)**	**Treatment (3 M to 18 M)**	**Post-treatment (21 & 24 M)**
eTARGET v ASSESS	8·99, 0·0027	10·54, 0·0012	1·57, 0·21
eTARGET v GENERIC	1·39, 0·24	1·74, 0·19	0·16, 0·69
GENERIC v ASSESS	4·19, 0·041	5·10, 0·024	0·77, 0·38
MISSING=SMOKING	**All Assessments (3 M to 24 M)**	**Treatment (3 M to 18 M)**	**Post-treatment (21 & 24 M)**
eTARGET v ASSESS	0·54, 0·46	1·36, 0·24	0·67, 0·41
eTARGET v GENERIC	1·25, 0·26	1·54, 0·21	0·20, 0·66
GENERIC v ASSESS	0·03, 0·86	0·03, 0·87	1·38, 0·24
90-day Point Prevalence Smoking Abstinence			
ALL PARTICIPANTS	**All Assessments (3 M to 24 M)**	**Treatment (3 M to 18 M)**	**Post-treatment (21 & 24 M)**
eTARGET v ASSESS	0·14, 5·00, 1341·9, 0·026	0·14, 4·58, 1186·2, 0·033	0·28, 2·61, 404·4, 0·11
eTARGET v GENERIC	0·16, 3·83, 966·8, 0·051	0·17, 4·49, 926·9, 0·034	0·35, 0·36, 280·3, 0·55
GENERIC v ASSESS	0·16, 0·34, 977·1, 0·56	0·09, 0·18, 2778·3, 0·67	0·30, 1·14, 351·7, 0·29
RESPONDERS ONLY	**All Assessments (3 M to 24 M)**	**Treatment (3 M to 18 M)**	**Post-treatment (21 & 24 M)**
eTARGET v ASSESS	8·41, 0·0037	7·43, 0·0064	4·33, 0·038
eTARGET v GENERIC	3·08, 0·079	4·19, 0·041	0·07, 0·79
GENERIC v ASSESS	2·17, 0·14	1·23, 0·27	3·52, 0·061
MISSING=SMOKING	**All Assessments (3 M to 24 M)**	**Treatment (3 M to 18 M)**	**Post-treatment (21 & 24 M)**
eTARGET v ASSESS	0·64, 0·43	0·86, 0·35	0·01, 0·91
eTARGET v GENERIC	2·97, 0·085	3·99, 0·046	0·06, 0·81
GENERIC v ASSESS	0·33, 0·56	0·43, 0·51	0·01, 0·93

Notes: The four values in a cell are the results from analyses combining the test statistics computed for each of the 20 multiple imputation data sets. They are r (an index of variation among the 20 χ^2values), the F-ratio, the denominator degrees of freedom (a function of number of data sets, numerator degrees of freedom, and r), and p-value. The numerator degrees of freedom is 1 for all treatment group comparisons. The GEE models for included group, assessment, and their interaction. Results for assessment and the interaction term are not shown.

The two values in a cell in the RESPONDERS ONLY and MISSING=SMOKING sections are the chi-square and p-value for the GEE analysis. The GEE models included group, assessment, and their interaction. For RESPONDERS ONLY, the GEE model also included baseline variables that predicted either missing surveys or smoking status. This full information maximum likelihood approach makes the missing at random assumption more plausible. Results for assessment and the interaction term are not shown.

Alphas are 0·0167 for eTARGET v ASSESS, 0·025 for GENERIC v ASSESS, and 0·050 for eTARGET v GENERIC.
All Participants (N = 2896) is based on data from 20 data sets following multiple imputation.
Responders Only is based on the participants who returned at least one follow-up assessment (n = 2393). Sample size varies by month (e.g., 18-month n = 1428; 24-month n = 1622).
Missing = Smoking (N = 2896) is based on all participants, whereby missing smoking status was imputed as smoking.
Abbreviations: M = Month of assessment, ASSESS = Assessment Only, eTARGET = Forever Free: E-Target, GENERIC = Forever Free: Generic

I. Supplementary Table 3: Smoking Abstinence Rates at 18 and 24 Months

	Point Prevalence at 18 Months			Point Prevalence at 24 Months		
ALL PARTICIPANTS	**7-day**	**30-day**	**90-day**	**7-day**	**30-day**	**90-day**
ASSESS	33·2%	27·1%	22·5%	40·0%	34·8%	29·1%
eTARGET	38·4%	31·8%	27·3%	42·3%	36·7%	32·4%
GENERIC	36·6%	30·1%	25·0%	42·2%	34·8%	30·8%
OR 95% CI for eTARGET vs. ASSESS	1·26 [0·98, 1·61]	1·25 [0·96, 1·63]	1·29 [0·97, 1·71]	1·10 [0·86, 1·41]	1·08 [0·85, 1·38]	1·17 [0·91, 1·51]
OR 95% CI for eTARGET vs. GENERIC	1·08 [0·88, 1·32]	1·08 [0·87, 1·35]	1·13 [0·89, 1·42]	1·01 [0·81, 1·24]	1·09 [0·89, 1·32]	1·08 [0·87, 1·33]
OR 95% CI for GENERIC vs. ASSESS	1·16 [0·92, 1·47]	1·16 [0·89, 1·51]	1·14 [0·88, 1·49]	1·10 [0·87, 1·39]	1·00 [0·78, 1·28]	1·14 [0·84, 1·41]
RESPONDERS ONLY	**7-day**	**30-day**	**90-day**	**7-day**	**30-day**	**90-day**
ASSESS	37·8%	30·7%	26·8%	46·3%	40·7%	34·4%
eTARGET	46·5%	40·0%	34·8%	48·9%	43·8%	38·8%
GENERIC	44·6%	37·5%	32·1%	50·2%	42·0%	38·3%
OR 95% CI for eTARGET vs. ASSESS	1·43 [1·08, 1·88]	1·50 [1·13, 2·01]	1·46 [1·08, 1·96]	1·11 [0·86, 1·44]	1·13 [0·87, 1·47]	1·21 [0·93, 1·59]
OR 95% CI for eTARGET vs. GENERIC	1·08 [0·85, 1·34]	1·11 [0·87, 1·41]	1·13 [0·88, 1·45]	0·95 [0·76, 1·18]	1·08 [0·86, 1·34]	1·02 [0·81, 1·28]
OR 95% CI for GENERIC vs. ASSESS	1·32 [1·00, 1·75]	1·35 [1·01, 1·80]	1·29 [0·95, 1·75]	1·17 [0·90, 1·52]	1·05 [0·81, 1·37]	1·19 [0·90, 1·56]
MISSING = SMOKING	**7-day**	**30-day**	**90-day**	**7-day**	**30-day**	**90-day**
ASSESS	21·9%	17·7%	15·5%	29·0%	25·6%	21·6%
eTARGET	22·1%	19·0%	16·5%	26·8%	24·1%	21·3%
GENERIC	20·9%	17·5%	15·0%	27·0%	22·5%	20·5%
OR 95% CI for eTARGET vs. ASSESS	1·01 [0·80, 1·29]	1·09 [0·84, 1·41]	1·08 [0.82, 1·42]	0·90 [0·72, 1·12]	0·92 [0·73, 1·16]	0·99 [0·77, 1·26]
OR 95% CI for eTARGET vs. GENERIC	1·08 [0·88, 1·31]	1·11 [0·90, 1·37]	1·12 [0·90, 1·41]	0·99 [0·83, 1·19]	1·09 [0·90, 1·32]	1·05 [0·86, 1·28]
OR 95% CI for GENERIC vs. ASSESS	0·90 [0·74, 1·20]	0·98 [0·76, 1·28]	0·96 [0·73, 1·27]	0·90 [0·72, 1·13]	0·85 [0·67, 1·07]	0·94 [0·74, 1·20]

Notes: All participants (N = 2896) is based on data from 20 data sets following multiple imputation.
Responders Only reflects the participants who responded at each assessment point (18-month n = 1428; 24-month n = 1622).
Missing = Smoking (N = 2896) is based on all participants, whereby missing smoking status was imputed as smoking.
ASSESS = Assessment Only, eTARGET = Forever Free: E-Target, GENERIC = Forever Free: Generic.
Odds ratios (OR) with 95% confidence intervals are based on univariate logistic regression analysis for the compared groups. The point estimate, lower confidence limit, and upper confidence limit were estimated by averaging the values generated by the analysis of each of the 20 data sets.

J. Supplementary Table 4: Analyses Evaluating Moderators of eTARGET versus ASSESS for 7-day Point Prevalence Smoking Abstinence

Moderator variable	r	F-Ratio	Denominator df	p
Sex	0·13	0·79	1493·6	0·37
Age (in years)	0·05	0·15	8894·2	0·70
Education	0·09	0·09	2543·6	0·77
Income	0·14	1·73	1274·5	0·12
FTND (0-10) at baseline	0·17	4·47	905·5	0·035
HSI pre-vaping (0-6)	0·27	1·04	421·2	0·31
Plan to quit within 30 days	0·08	2·95	3362·7	0·086
Refillable e-cigarette type	0·03	0·07	28297·2	0·79
Vaping daily at baseline	0·06	0·15	5410·6	0·70
Using e-cigarettes to help quit smoking at baseline	0·09	0·11	3062·4	0·74

Notes: eTARGET v ASSESS (N = 1742) is based on data from 20 data sets following multiple imputation evaluating the listed variable as a prospective moderator of the intervention effect relative to ASSESS. Model predicts 7-day point prevalent abstinence with the following covariates: Treatment group (eTARGET v ASSESS), assessment (3 – 24 months), group x assessment, moderator, and group x moderator. Results are not shown for group, assessment, and group x assessment.

The four values for each variable are the results from analyses combining the test statistics computed for each of the 20 multiple imputation data sets. They are r (an index of variation among the 20 chi-square values), the F-ratio, the denominator degrees of freedom (a function of number of data sets, numerator degrees of freedom, and r), and p-value. The numerator degrees of freedom is 1 for all group x moderator tests.

Abbreviations: FTND = Fagerström Test for Nicotine Dependence, HSI = Heaviness of Smoking Index

K. Supplementary Table 5: 7-day Point Prevalence Vaping Abstinence Rates

ALL PARTICIPANTS	**3 M**	**6 M**	**9 M**	**12 M**	**15 M**	**18 M**	**21 M**	**24 M**
ASSESS	8·8%	15·3%	22·9%	20·4%	24·8%	28·0%	30·1%	32·4%
eTARGET	12·4%	19·2%	20·9%	26·9%	26·7%	30·9%	32·4%	35·9%
GENERIC	11·4%	17·9%	21·8%	25·9%	26·7%	29·2%	30·5%	34·0%
RESPONDERS ONLY	**3 M**	**6 M**	**9 M**	**12 M**	**15 M**	**18 M**	**21 M**	**24 M**
ASSESS	8·6%	15·0%	22·4%	18·8%	23·9%	27·7%	28·2%	30·7%
eTARGET	12·4%	18·9%	20·2%	25·4%	25·0%	29·6%	31·8%	34·6%
GENERIC	12·1%	18·1%	21·5%	27·8%	27·2%	29·8%	30·7%	33·1%

Notes: All participants (N = 2896) is based on data from 20 data sets following multiple imputation. Unlike smoking status, there was no posthoc adjustment to implement missing implies vaping.
Responders Only is based on the participants who returned at least one follow-up assessment (n = 2393).
Sample size varies by month (e.g., 18-month n = 1428; 24-month n = 1622).
M = Month of assessment, ASSESS = Assessment Only, eTARGET = Forever Free: E-Target, GENERIC = Forever Free: Generic

L. Supplementary Table 6: Analyses of 7-day Point Prevalence Vaping Abstinence Rates

ALL PARTICIPANTS	All Assessments (3 M to 24 M)	Treatment (3 M to 18 M)	Post-treatment (21 & 24 M)
eTARGET v ASSESS	0·29, 3·62, 385·4, 0·058	0·23, 3·94, 525·7, 0·048	0·79, 0·90, 97·0, 0·35
eTARGET v GENERIC	0·30, 0·55, 349·0, 0·46	0·22, 0·41, 570·2, 0·52	0·56, 0·68, 148·7, 0·41
GENERIC v ASSESS	0·24, 1·82, 504·9, 0·18	0·26, 2·32, 449·8, 0·13	0·18, 0·30, 792·4, 0·58
RESPONDERS ONLY	**All Assessments (3 M to 24 M)**	**Treatment (3 M to 18 M)**	**Post-treatment (21 & 24 M)**
eTARGET v ASSESS	3·31, 0·069	3·82, 0·051	0·68, 0·41
eTARGET v GENERIC	0·55, 0·46	0·18, 0·67	1·05, 0·30
GENERIC v ASSESS	1·63, 0·20	2·68, 0·10	0·03, 0·87

Notes: The four values in a cell are the results from analyses combining the test statistics computed for each of the 20 multiple imputation data sets. They are r (an index of variation among the 20 chi-square values), the F-ratio, the denominator degrees of freedom (a function of number of data sets, numerator degrees of freedom, and r), and p-value. The numerator degrees of freedom is 1 for all treatment group comparisons. The GEE models for included group, assessment, and their interaction. Results for assessment and the interaction term are not shown.

The two values in a cell in the RESPONDERS ONLY section are the chi-square and p-value for GEE analysis. The GEE models for included group, assessment, and their interaction. For RESPONDERS ONLY, the GEE model also included baseline variables that predicted either missing surveys or vaping status. This full information maximum likelihood approach makes the missing at random assumption more plausible. Results for assessment and the interaction term are not shown.

Alphas are 0·0167 for eTARGET v ASSESS, 0·025 for GENERIC v ASSESS, and 0·050 for eTARGET v GENERIC.

All participants (N = 2896) is based on data from 20 data sets following multiple imputation.

Responders Only is based on the participants who returned at least one follow-up assessment (n = 2393). Sample size varies by month (e.g., 18-month n = 1428; 24-month n = 1622).

Abbreviations: M = Month of assessment, ASSESS = Assessment Only, eTARGET = Forever Free: E-Target, GENERIC = Forever Free: Generic.

M. Supplementary Table 7: 7-day Point Prevalence Smoking Abstinence Rates by Vaping Status

ALL PARTICIPANTS	3 M	6 M	9 M	12 M	15 M	18 M	21 M	24 M
Vaping	15·2%	22·1%	27·3%	32·3%	34·8%	38·7%	41·9%	44·4%
Not Vaping	7·2%	14·4%	20·9%	24·4%	29·3%	31·7%	33·4%	36·8%

Notes: All participants (N = 2896) is based on data from 20 data sets following multiple imputation.
Abbreviations: M = Month of assessment.

N. Supplementary Table 8: Cost-Effectiveness Sensitivity Analyses

	18 Months				24 Months			
	Full Sample		Higher Dependence		Full Sample		Higher Dependence	
Costs	**GENERIC**	**eTARGET**	**GENERIC**	**eTARGET**	**GENERIC**	**eTARGET**	**GENERIC**	**eTARGET**
80%	1228	800	625	512	1895	1802	1021	1050
90%	1382	900	703	576	2132	2028	1149	1181
100%	1535	1000	781	640	2369	2253	1277	1312
110%	1689	1100	859	704	2606	2478	1405	1443
120%	1842	1200	938	768	2843	2703	1532	1575

Notes: All values are in US dollars.
Higher Dependence reflects participants whose baseline cigarette dependence was in the upper 3 quartiles of the distribution (FNTD ≥ 2).
Costs at 100% reflects the calculated costs of the intervention as reported in the manuscript. Variations above and below that amount may reflect different modes of administration, different labor costs, or economies of scale.