Potential impact of a menthol cigarette ban on smoking prevalence

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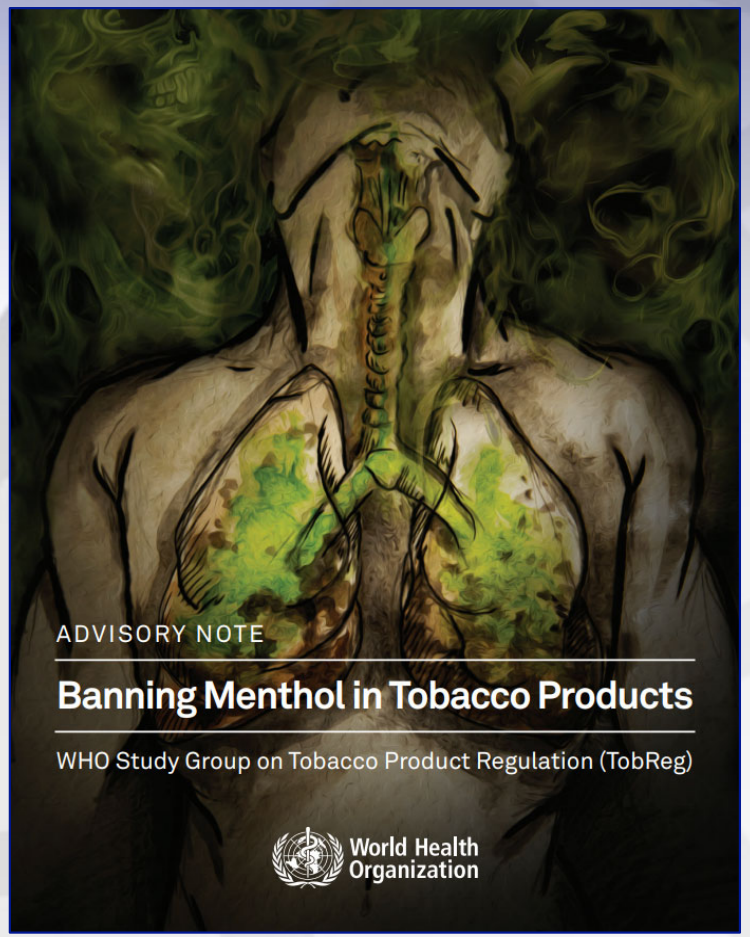
Disclosure – K. Michael Cummings, PhD, MPH

1. Medical University of South Carolina
2. NIH grant funding
3. Paid expert witness representing plaintiffs in litigation against cigarette manufacturers.
4. No cigarette or vaping company funding
5. On the record as saying…
   a) *The world would be better off without cigarettes*
   b) *Cigarette manufacturers should be held accountable for the injuries they've caused*
   c) *I also believe in the potential of smoking harm reduction*

Acknowledgement: this talk was only possible

Global recommendations for menthol ban



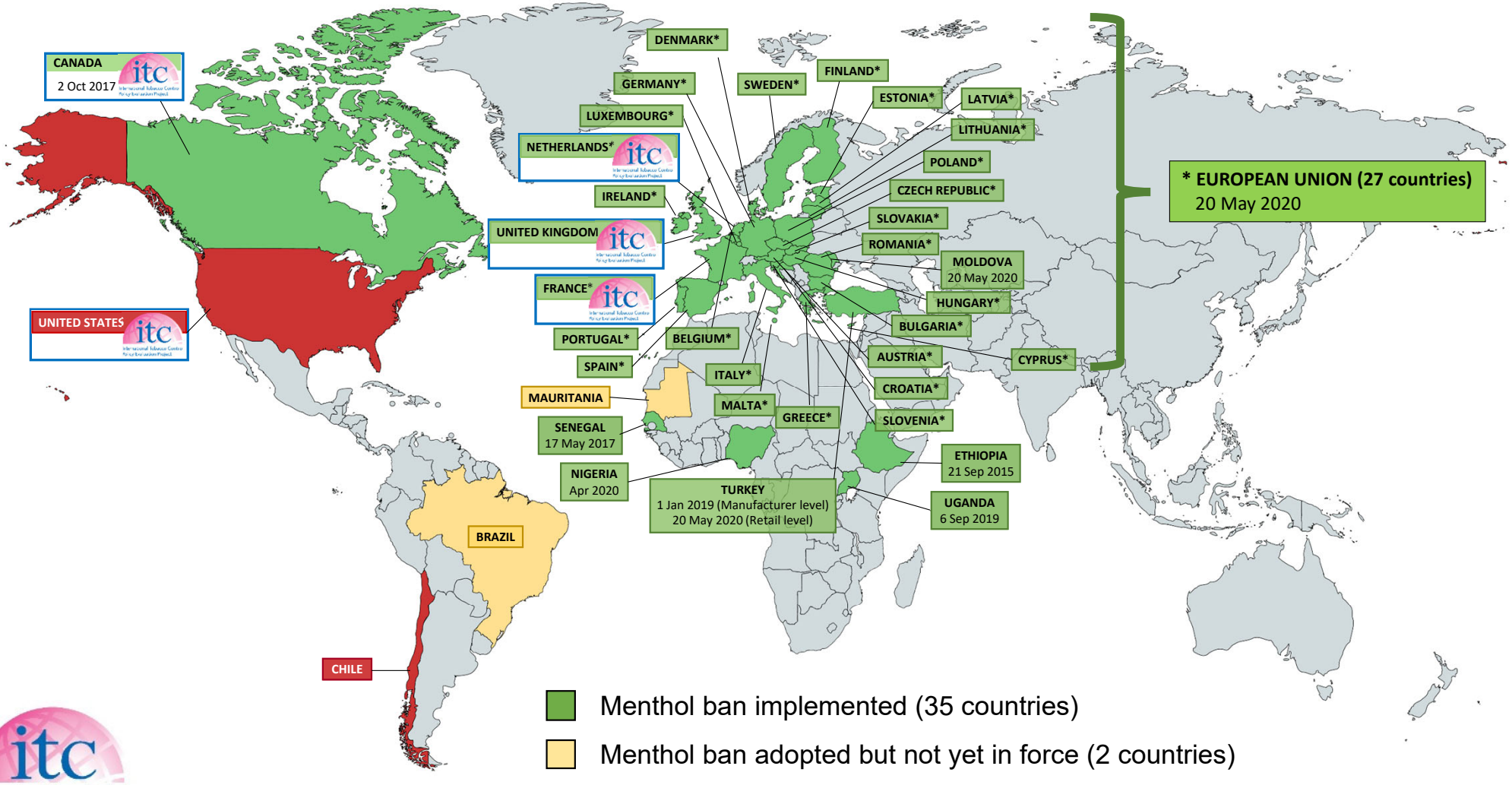
WHO FCTC Articles 9/10 Guidelines:

Parties should prohibit or restrict ingredients that may be used to increase palatability in tobacco products (includes menthol).

WHO TobReg 2016 Advisory Note:

"In view of the weight of the evidence, a ban on menthol in cigarettes is recommended, which should include menthol analogues, precursors and derivatives."

Nationwide Menthol Cigarette Bans: Global Status as of May 2020



Menthol ban implemented (35 countries)

Menthol ban adopted but not yet in force (2 countries)

Menthol ban under formal consideration (2 countries)

International Tobacco Control Policy Evaluation Project

Created with mapchart.net ©

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Original Investigation
Received December 15, 2020; Editorial Decision May 29, 2021; Accepted June 4, 2021
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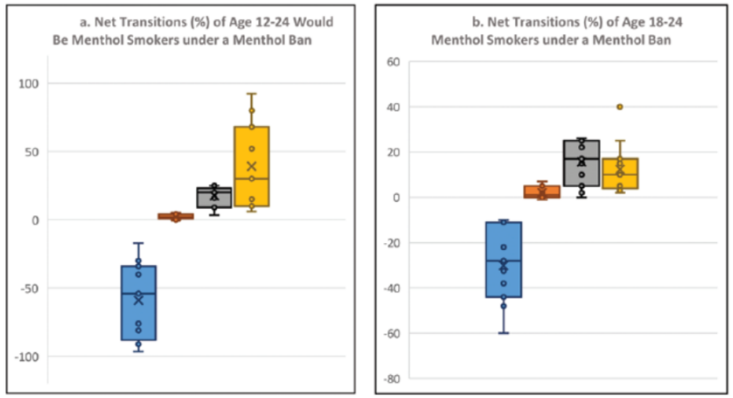
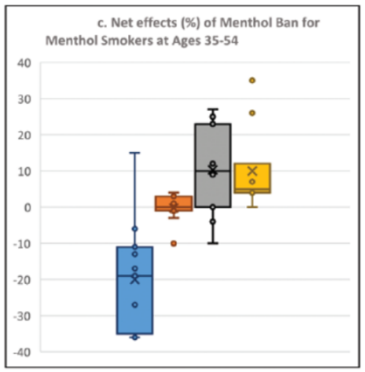
Original Investigation

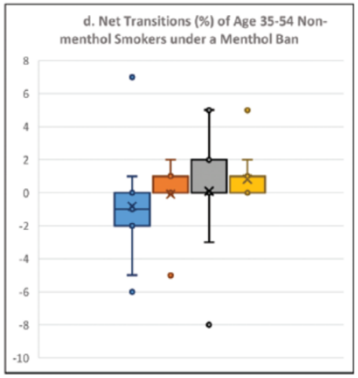
An Expert Elicitation on the Effects of a Ban on Menthol Cigarettes and Cigars in the United States

David T. Levy PhD[1], Christopher J. Cadham MA[1], Luz Maria Sanchez-Romero MD, PhD[1], Marie Knoll MA[1], Nargiz Travis MA[1], Zhe Yuan MS[1], Yameng Li MS[1], Ritesh Mistry PhD[2], Clifford E Douglas JD[3], Jamie Tam PhD[4], Aylin Sertkaya PhD[5], Kenneth E. Warner PhD[3], Rafael Meza PhD[6]

Conclusions: According to expert opinion, a menthol ban is expected to substantially reduce smoking initiation and combustible tobacco product use among current menthol smokers.







Boxplot Legend: = net change in combustible use, = net change in smokeless tobacco use, = net change in novel nicotine delivery product use, = net change in initiation or switching to no regular use

Figure 1. Boxplots of menthol smoker transitions by age group.

Implications: The US Food and Drug Administration recently announced its intention to ban menthol in cigarettes, but information on the potential impact on smoking and other nicotine product use is limited. We conducted an expert elicitation to gauge the impact of a menthol cigarette and cigar ban in the United States. A panel of experts estimated that menthol smokers ages 35–54 would reduce combustible tobacco use by 20%, with half switching to e-cigarettes and half quitting all nicotine use. Larger reductions were expected at younger ages, and menthol smoking initiation was reduced by 59% with 18% instead using e-cigarettes. African Americans were expected to have greater reductions in combustible tobacco use than the rest of the population.

Public health impact of a US ban on menthol in cigarettes and cigars: a simulation study

David T Levy ,[1] Rafael Meza ,[2] Zhe Yuan,[1] Yameng Li,[1] Christopher Cadham,[2] Luz Maria Sanchez-Romero ,[1] Nargiz Travis ,[1] Marie Knoll,[1] Alex C Liber ,[1] Ritesh Mistry ,[2] Jana L Hirschtick,[2] Nancy L Fleischer ,[2] Sarah Skolnick,[2] Andrew F Brouwer ,[2] Cliff Douglas ,[2] Jihyoun Jeon,[2] Steven Cook,[2] Kenneth E Warner [2]

MENTHOL CIGARETTE BAN COULD SAVE 650,000 LIVES BY 2060

Levy DT, *et al*. *Tob Control* 2021;**0**:1–8. doi:10.1136/tobaccocontrol-2021-056604

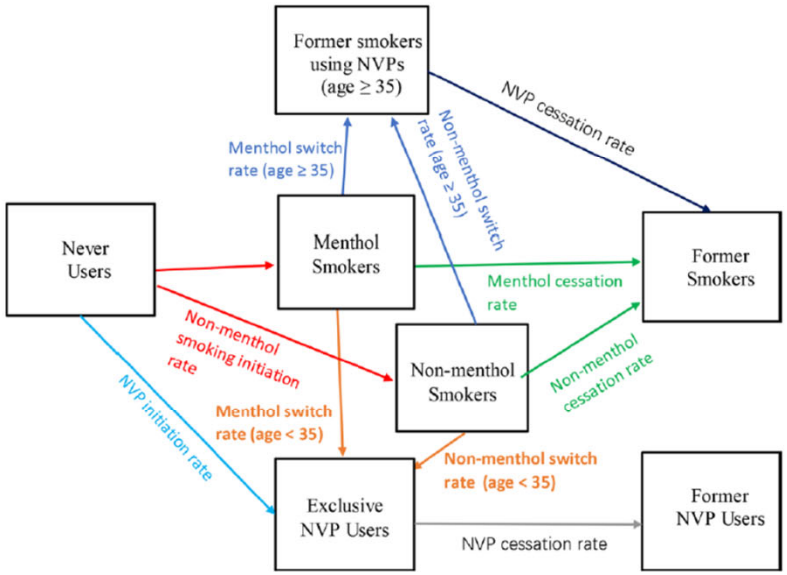


Figure 1 Transitions between smoking and nicotine vaping product (NVP) use states in the status quo scenario.

Results As a result of the ban, overall smoking was estimated to decline by 15% as early as 2026 due to menthol smokers quitting both NVP and combustible use or switching to NVPs. These transitions are projected to reduce cumulative smoking and vaping-attributable deaths from 2021 to 2060 by 5% (650 000 in total) and reduce life-years lost by 8.8% (11.3 million). Sensitivity analyses showed appreciable public health benefits across different parameter specifications.

Conclusions and relevance Our findings strongly support the implementation of a ban on menthol in cigarettes and cigars.

Canada's Menthol Cigarette Ban

- ITC Canada Cohort Survey: Canadian arm of the ITC Four Country Smoking and Vaping Survey (2016-2018)
- N=1236 adult cigarette smokers (138 menthol, 1098 non-menthol)

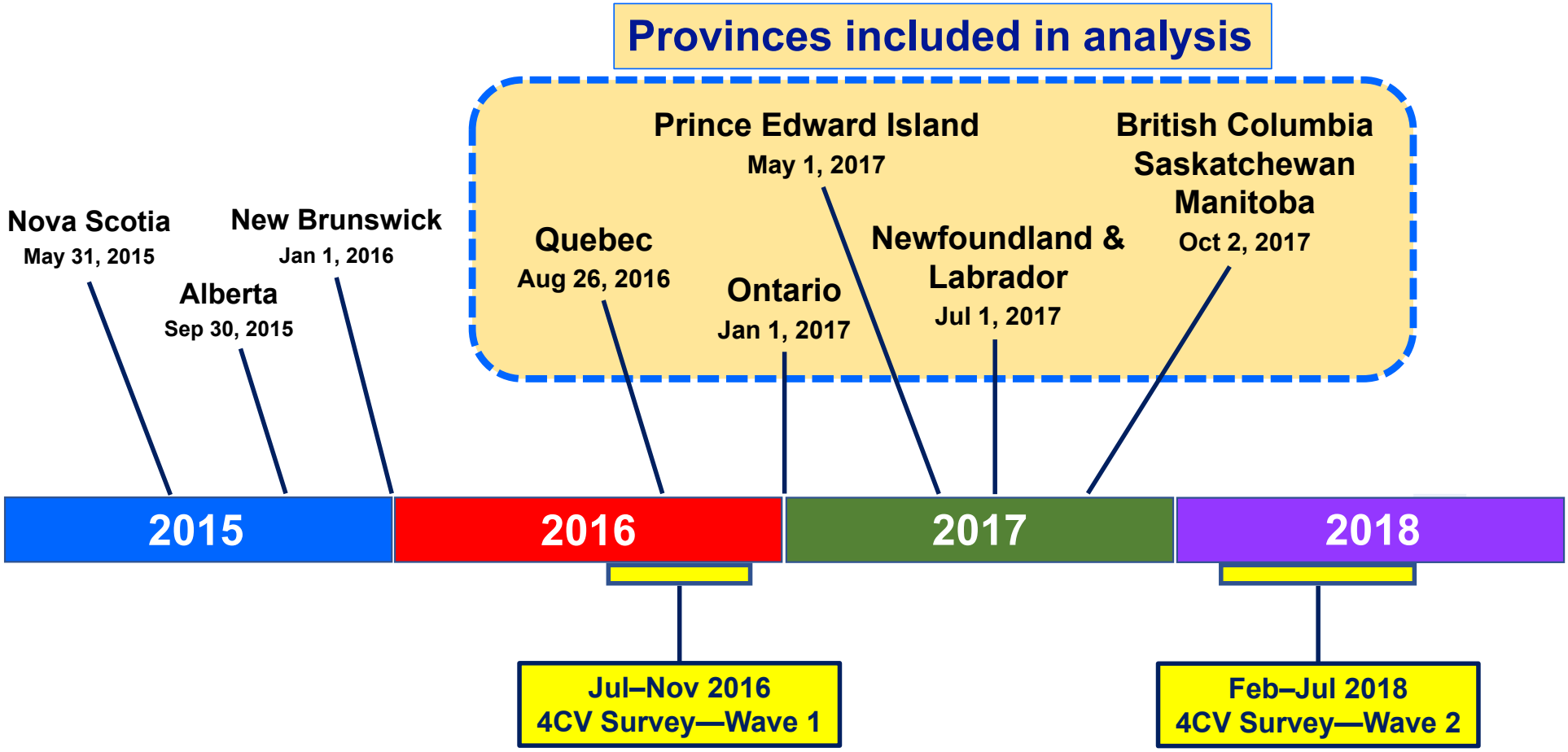
Original research

Evaluating the impact of menthol cigarette bans on cessation and smoking behaviours in Canada: longitudinal findings from the Canadian arm of the 2016–2018 ITC Four Country Smoking and Vaping Surveys

Janet Chung-Hall [1], Geoffrey T Fong [1,2,3], Gang Meng,[1] K Michael Cummings [4], Andrew Hyland,[5] Richard J O'Connor,[5] Anne C K Quah [1], Lorraine V Craig [1]

- Survey waves before (2016) and after (2018) menthol bans in 7 provinces, covering 83% of the Canadian population:
  - Newfoundland & Labrador, Prince Edward Island, Quebec, Ontario, Manitoba, Saskatchewan, British Columbia

Timeline of menthol cigarette bans by province and the two waves of the ITC Canada Survey



After menthol ban: quit attempts and quitting

Outcome	Menthol Smokers	Non-Menthol Smokers	Difference
Quit attempts	58.7	49.0	9.7*
Quit success (daily smokers)	21.0	11.6	9.4*
Quit success (all smokers)	21.5	14.0	7.5†
Staying quit among smokers who quit before the ban	12.7	5.2	7.5*

* $p<0.05$; † $p=0.06$

Implications of the Canadian menthol ban for the United States

Applying Canada's menthol ban effect (increased quitting of 9.4% of daily menthol smokers and 7.5% of all menthol smokers) to the United States, with number of U.S. menthol smokers from 2019 National Survey on Drug Use and Health (NSDUH))

How many ADDITIONAL daily smokers would QUIT after a national U.S. menthol ban? ($p<0.05$)

All daily smokers: Daily menthol smokers in U.S. x 9.4% = 9,827,554 x 9.4% = **923,790**

African American daily smokers: Daily AA menthol smokers in U.S. x 9.4% = 2,464,126 x 9.4% = **231,628**

How many additional total smokers (daily & non-daily) would quit after a U.S. menthol ban? ($p=0.06$)

All smokers: Total menthol smokers in U.S. x 7.5% = 18,589,341 x 7.5% = **1,394,201**

All African American smokers: Total AA menthol smokers in U.S. x 7.5% = 5,234,160 x 7.5% = **392,562**

- **Substantial increases in smoking cessation**
- **Greater proportional benefits for African American smokers**

ITC evaluation study: Chung-Hall J, Fong GT, Meng G, Cummings KM, Hyland A, O'Connor RJ, Quah ACK, Craig LV. Evaluating the impact of menthol cigarette bans on cessation and smoking behaviors in Canada: Longitudinal findings from the Canadian arm of the 2016-18 ITC Four Country Smoking and Vaping Surveys. Tob Control. 06 April 2021. https://tobaccocontrol.bmj.com/content/early/2021/03/31/tobaccocontrol-2020-056259

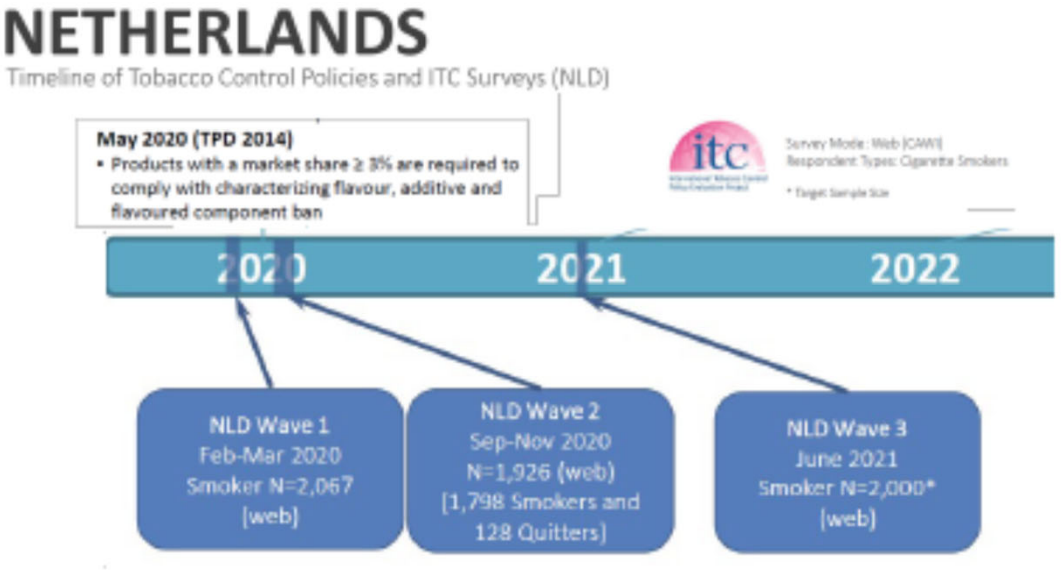
Menthol smokers' quitting behaviours after the EU ban on menthol: Findings from the ITC Netherlands Surveys

Christina N. Kyriakos[1], Pete Driezen[2], Janet Chung-Hall[2], Anne C.K. Quah[2], Geoffrey T. Fong[2,3], Marc Willemsen[4], Filippos T. Filippidis[1]

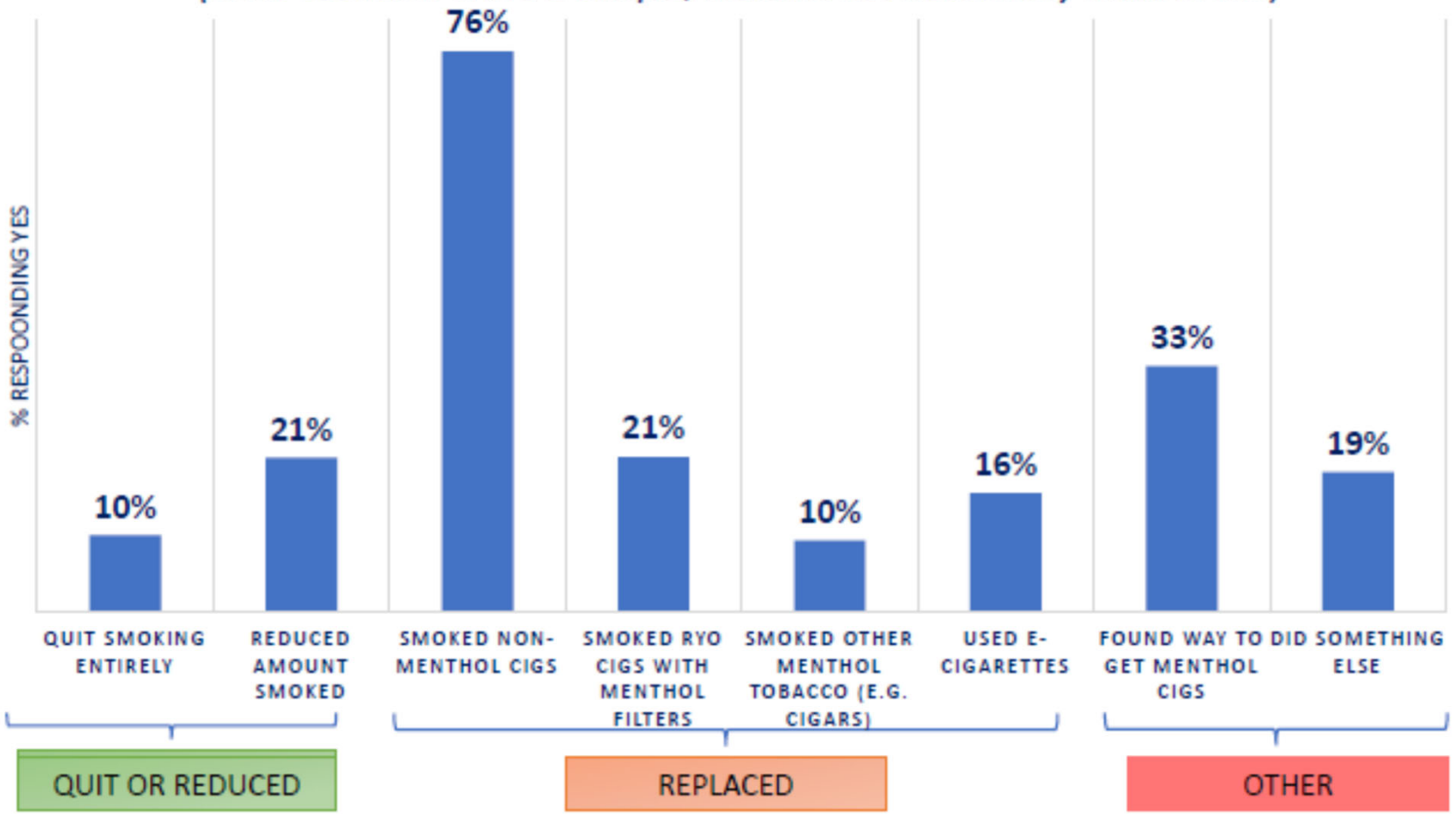
[1]Imperial College London, UK [2]University of Waterloo, Canada [3]Ontario Institute for Cancer Research, Canada, [4]Maastricht University, the Netherlands

Background & Methods

- The EU banned menthol in **May 2020**
- Longitudinal data from **ITC Netherlands Surveys** Wave 1 (Feb-Mar 2020, pre-ban) and Wave 2 (Sept-Nov 2020, post-ban) among adult smokers and quitters
  - *Cohort sample (N=1,732): Present in both Wave 1 and Wave 2*
  - Bivariate and logistic regression analyses in STATA
- **Aim**: To evaluate quitting behaviours among adult smokers from the Netherlands before and after the EU menthol cigarette ban



Responses to menthol ban among those who reported that they were smoking menthol cigarettes before the ban (n=291), % weighted
(cross-sectional Wave 2 sample, menthol not necessarily usual brand)



Conclusions

- The use of menthol cigarettes among smokers in the Netherlands decreased shortly after implementation of the EU menthol ban.
- The menthol ban was significantly associated with quitting among pre-ban menthol smokers compared to non-menthol smokers, but only among females.
- Most smokers reported either switching to non-menthol cigarettes or continuing to smoke menthol cigarettes.
- Post-ban menthol use does not appear to be due to smuggling/ illicit trade

SRNT·E 2021

Menthol cigarette smoking among *youth* (16-19 years old) in England, Canada, and the US between 2018 and 2020

FINDINGS FROM THE ITC YOUTH TOBACCO & VAPING SURVEYS

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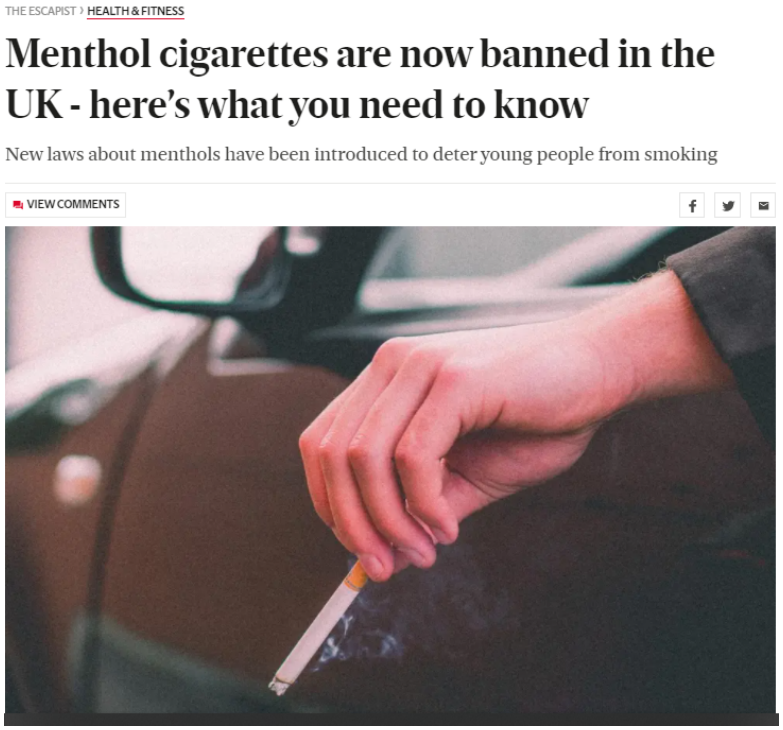
itc International Tobacco Control Policy Evaluation Project

Menthol regulations

OCT 2017

MAY 2020

NOT FEDERALLY BANNED (YET)



THE ESCAPIST › HEALTH & FITNESS

Menthol cigarettes are now banned in the UK - here's what you need to know

New laws about menthols have been introduced to deter young people from smoking

VIEW COMMENTS

GOVERNMENT OF CANADA. ORDER AMENDING THE SCHEDULE TO THE TOBACCO ACT (MENTHOL), 2017.
DIRECTIVE 2014/40/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL. 2014.

Menthol markets

4.5% (2017)

21% (2018)

36% (2018)

GOVERNMENT OF CANADA. ORDER AMENDING THE SCHEDULE TO THE TOBACCO ACT (MENTHOL), 2017.

EUROMONITOR INTERNATIONAL. GLOBAL MARKET SHARE FOR MENTHOL AND CAPSULE CIGARETTES, 2014-2018.

Aims and hypotheses

1. **Evaluate the impact of menthol bans on youth menthol smoking**

   H1. England – menthol smoking will decline after the ban

   H2. Canada/US – menthol smoking will remain stable but CA (ban) < US (no ban)

ITC YOUTH SURVEY

Methods

- Analyses pre-registered (osf.io/q2bmj)
- Quasi-experimental design

	2018	2019	2020 Feb	2020 Aug
	X	X	X	X
	O	O	O	X
	O	O	O	O

ITC YOUTH SURVEY

Analytic sample N=7,067

PAST 30-DAY SMOKERS

	2018	2019	2020 FEB	2020 AUG
	584	557	614	358
	634	588	936	685
	445	548	630	488
	1,663	**1,693**	**2,180**	**1,531**

Measures – menthol smoking (outcome)

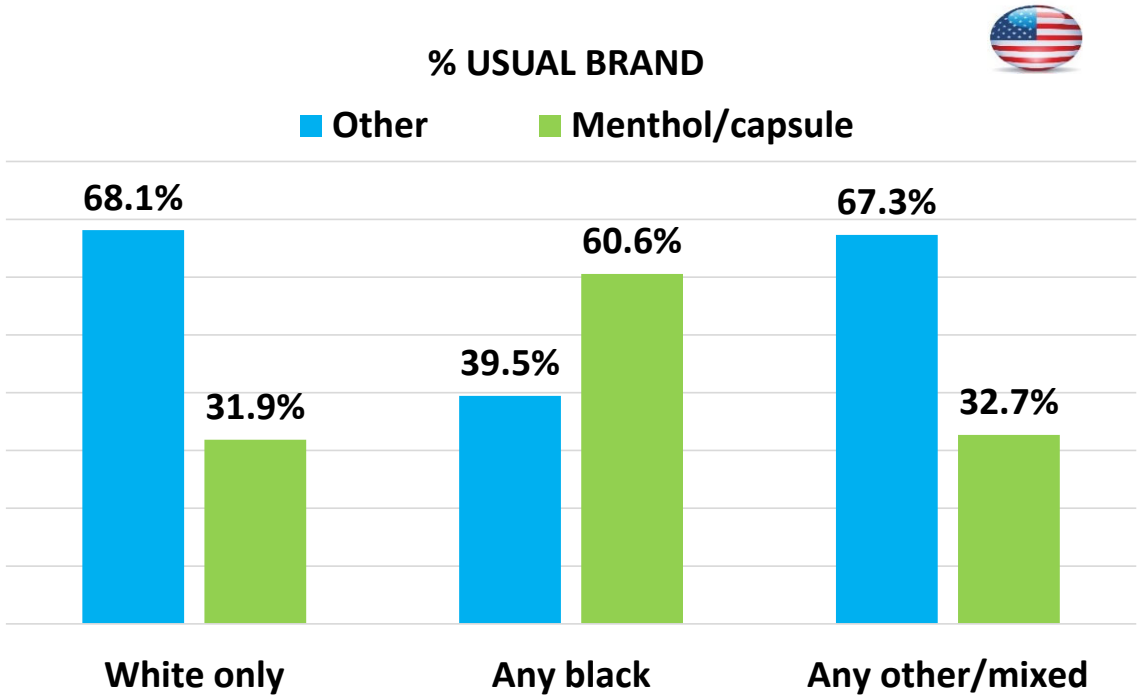
What specific brand/variety of cigarettes or roll-your-own (RYO) tobacco do you currently smoke most often?

___

CODED AS MENTHOL/CAPSULE VS. NEITHER

Race

US **PAST 30 DAY SMOKERS** 2018-2020 N=2,111

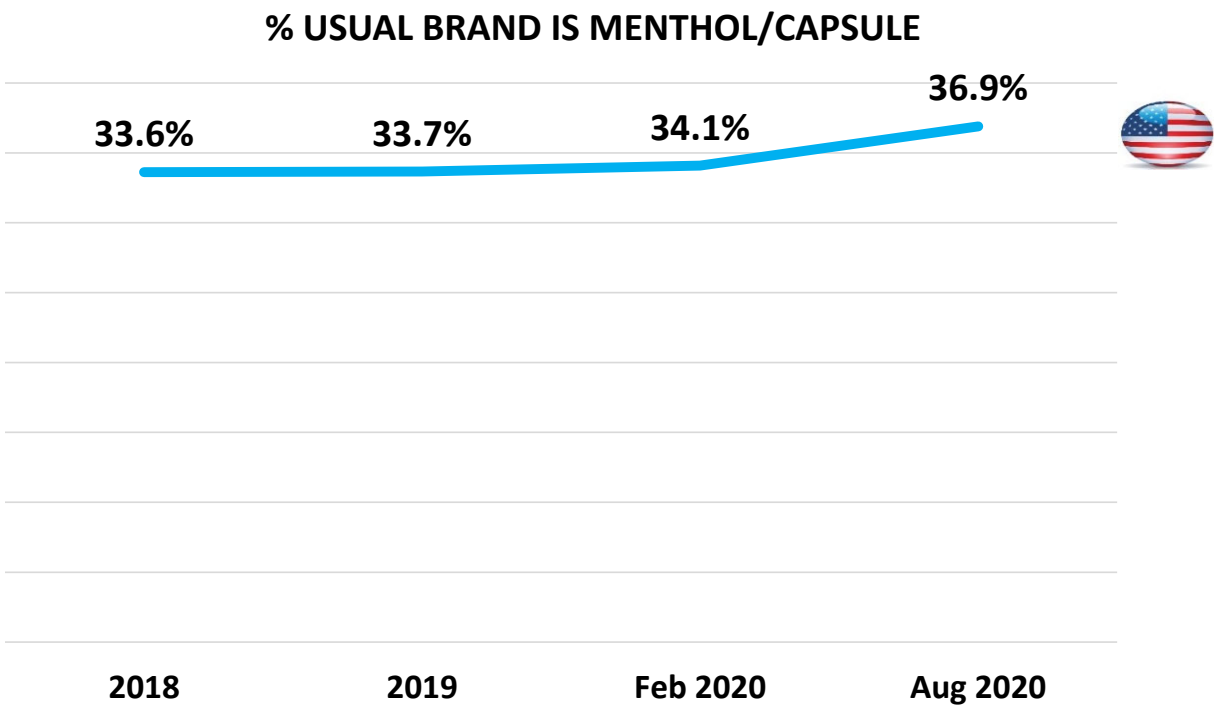


BLACK VS. WHITE: AOR=3.32 (95% CI=2.39-4.62), P<.001;
BLACK VS. OTHER/MIXED: AOR=3.14 (95% CI=2.12-4.64), P<.001

ANALYSES STRATIFIED BY COUNTRY AND ADJUSTED FOR YEAR, AGE GROUP, SEX

Did menthol bans reduce youth menthol smoking?

PAST 30 DAY SMOKERS 2018-2020 N=7,067

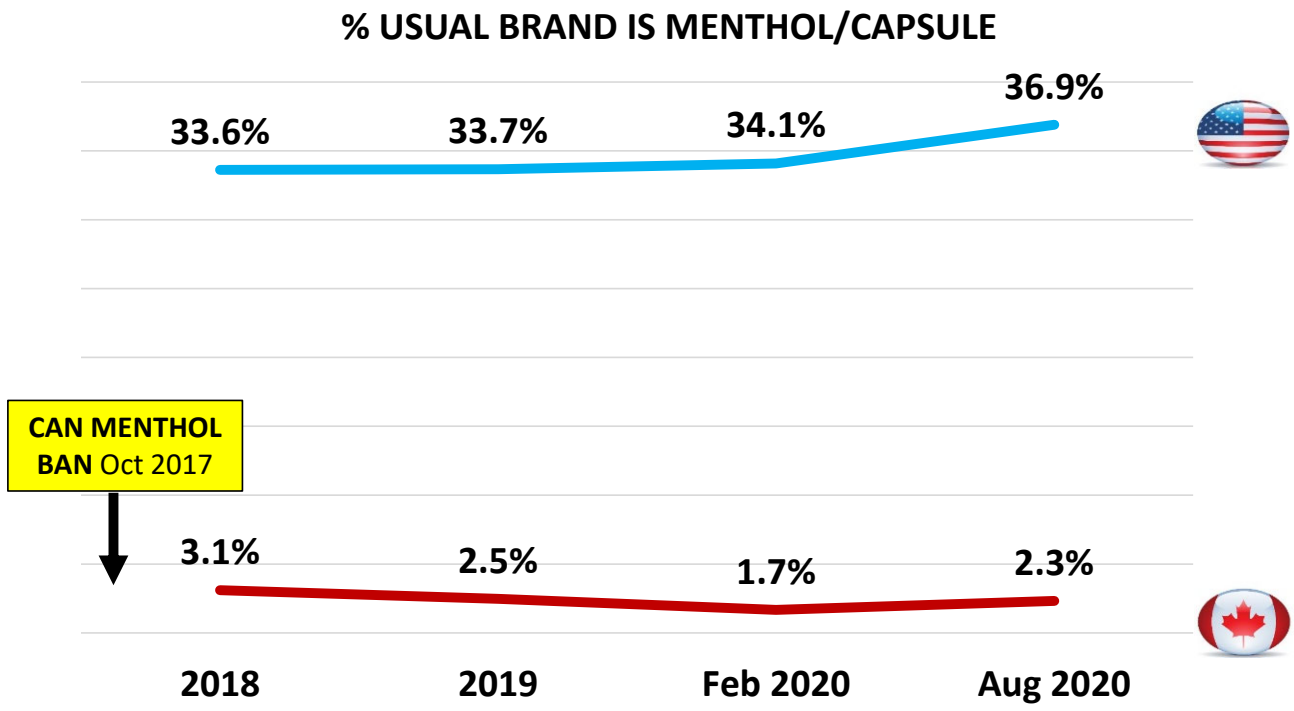


US AUG 2020 VS. 2018: AOR=0.76 (95% CI=0.30-1.96), P=.573

ANALYSES STRATIFIED BY COUNTRY AND ADJUSTED FOR AGE GROUP, SEX, RACE

Did menthol bans reduce youth menthol smoking?

PAST 30 DAY SMOKERS 2018-2020 N=7,067

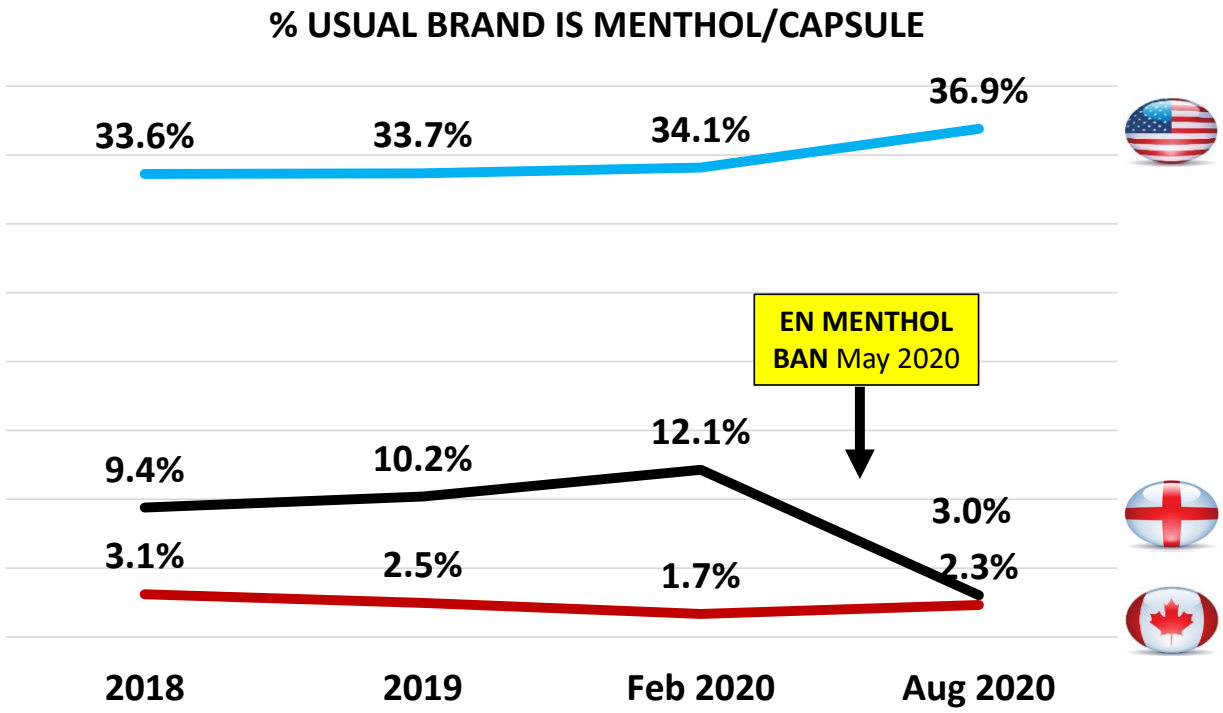


CANADA AUG 2020 VS. 2018: AOR=1.21 (95% CI=0.86-1.71), P=.272

ANALYSES STRATIFIED BY COUNTRY AND ADJUSTED FOR AGE GROUP, SEX, RACE

Did menthol bans reduce youth menthol smoking?

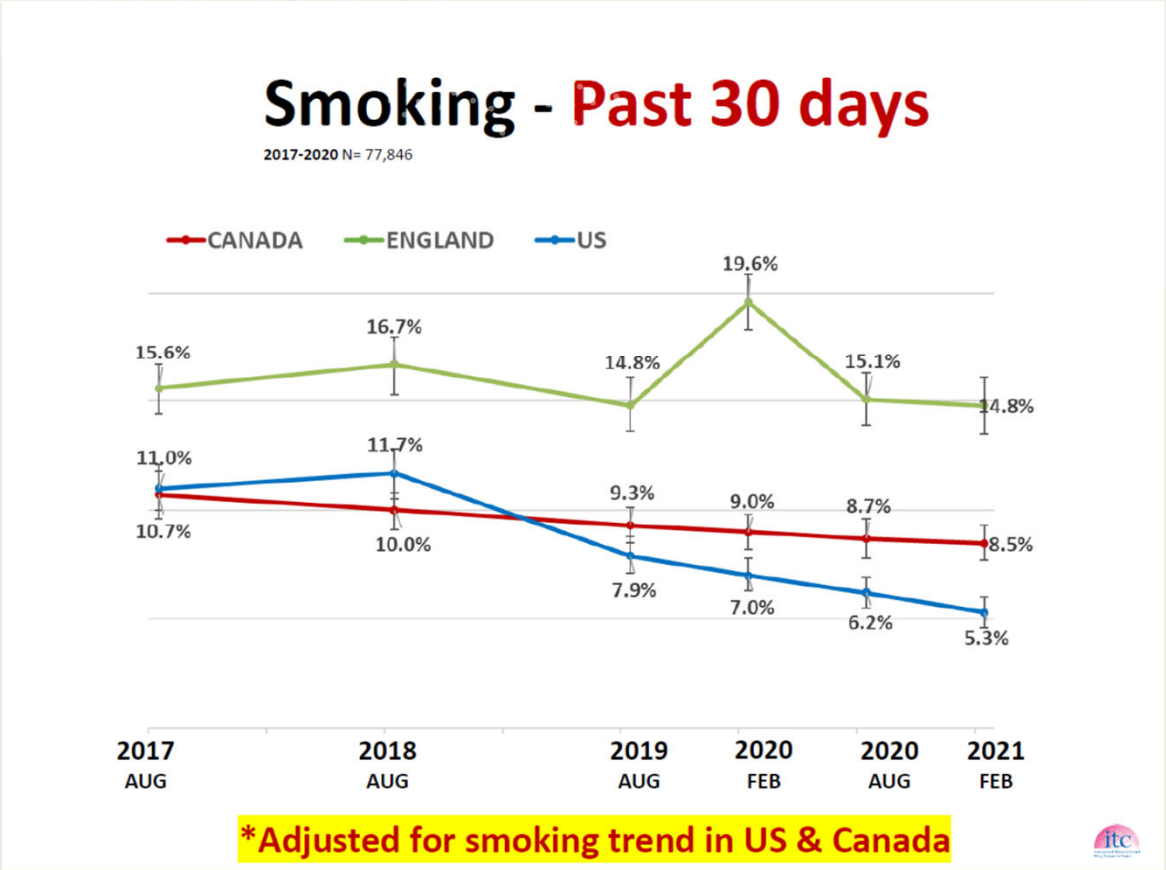
PAST 30 DAY SMOKERS 2018-2020 N=7,067



ENGLAND FEB 2020 VS. 2018: AOR=1.31 (95% CI=0.90-1.90), P=.157;
AUG VS. FEB 2020: AOR=0.30 (95% CI=0.14-0.37), P<.001

ANALYSES STRATIFIED BY COUNTRY AND ADJUSTED FOR AGE GROUP, SEX, RACE

Trends in overall smoking prevalence



Take-home message

Clear impact of menthol cigarette ban on reducing the proportion of youth and adult smokers who smoke menthol cigarettes

Menthol cigarette ban resulted in higher rates of quit attempts and success in quitting among menthol smokers

It is likely that overall smoking prevalence would drop, with one recent modeling study predicting a 15% reduction by 2026

Major Support for the ITC Project

US National Cancer Institute: P01 CA200512

Canadian Institutes of Health Research: FDN-148477

Ontario Institute for Cancer Research
Senior Investigator Award (2007-2022)

University of Waterloo Office of Research

ITC Project Research Organizations

ITC Project Research Support


The End