



Impact of Canada's Menthol Cigarette Ban on Quitting Among Menthol Smokers: Pooled Analysis of Pre-Post Evaluation from the ITC Project and the Ontario Menthol Ban Study and Projections of Impact in the USA

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Impact of Canada's menthol cigarette ban on quitting among menthol smokers: pooled analysis of pre-post evaluation from the ITC Project and the Ontario Menthol Ban Study and projections of impact in the USA

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ABSTRACT

Introduction Between 2015 and 2018, Canada banned menthol cigarettes. This study pooled data from two pre-post cohort studies (the Ontario Menthol Ban Study, and the International Tobacco Control Policy Evaluation (ITC) Canada Survey, conducted in seven provinces) to derive more precise estimates of the impact of Canada's menthol ban on quitting and to apply these estimates to project the impact of a menthol ban in the USA.

Methods Weighted multivariable logistic analyses compared post-ban quit success of menthol smokers with non-menthol smokers (for daily smokers and for all (daily + non-daily) smokers), controlling for sex, age, ethnicity, education, baseline smoking status, baseline cigarettes per day and study regions. Projections to the USA were created by multiplying the effect size of the Canadian menthol ban on quitting (percentage of increased quitting among menthol smokers) by the number of menthol smokers overall and among African Americans, from the 2019 National Survey on Drug Use and Health.

Results After the menthol cigarette ban, menthol smokers were more likely than non-menthol smokers to have quit smoking among daily smokers (difference=8.0%; 95% CI: 2.4% to 13.7%, p=0.005) and all (daily+non-daily) smokers (difference=7.3%; 95% CI: 2.1% to 12.5%, p=0.006). The projected number of smokers who would quit after a US menthol ban would be 789 724 daily smokers (including 199 732 African Americans) and 1 337 988 daily+non-daily smokers (including 381 272 African Americans).

Conclusions This pooled analysis of Canada's menthol cigarette ban provides the foundation for estimating the impact of menthol bans in the USA and other countries. Projections suggest that a US menthol cigarette ban would have a substantial impact on increasing quitting.

What this paper adds

What is already known on this topic

⇒ Between 2015 and 2018, all Canadian provinces banned menthol in cigarettes. Two pre-post studies found that the menthol ban—one in Ontario and one in seven Canadian provinces covering 83% of the Canadian population—led to increases in quit attempts and in quitting among menthol smokers compared with non-menthol smokers.

What this study adds

⇒ This study pools data from those two cohort studies—the International Tobacco Control Policy Evaluation (ITC) Project Canada Survey and the Ontario Menthol Ban Study—which used the similar definitions of menthol smoker and of quitting at post-ban, and were conducted within 1–2 months of each other at pre-ban (2016) and post-ban (2018) waves—to derive a more precise estimate of the impact of Canada's menthol ban on quitting and to apply this estimate to project the impact of a menthol ban in the USA, where prevalence of menthol cigarette use is high among cigarette smokers (40%), and much higher among African American smokers (85%).

⇒ The pooled analysis found that if a US menthol cigarette ban had the same impact as the Canadian menthol ban, there would be a substantial increase in quitting among menthol smokers in the USA, compared with non-menthol smokers, among all smokers and among African American smokers.

How this study might affect research, practice, or policy

⇒ This pooled analysis of Canada's menthol cigarette ban provides the foundation for estimating the impact of menthol bans in the USA and other countries.

International Tobacco Control Policy Evaluation Project (the ITC Project)



Canada



United States



Australia



United Kingdom



Greece



Vietnam



Ireland



Thailand



Malaysia



Republic of Korea



Hungary



China



Uruguay



Mexico



New Zealand



Poland



France



Germany



Netherlands



Bangladesh



Romania



Brazil



Mauritius



Bhutan



India



Spain



Zambia



Kenya



Abu Dhabi



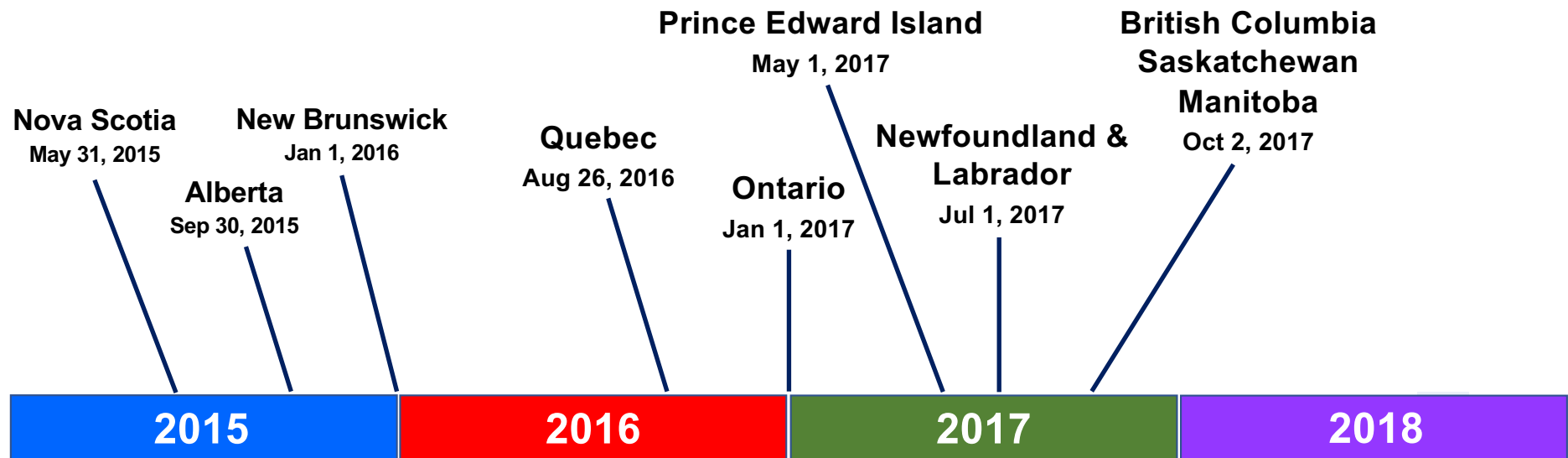
Japan



Israel

- 31 countries, covering over half of the world's population and over 2/3 of the world's tobacco users
- Only international cohort study of tobacco use
- Key objective: evaluation of tobacco control policies
- Recent objective added: understanding use of other nicotine products across countries with emphasis on evaluating policies on different products

From 2015 to 2017, all Canadian provinces banned menthol cigarettes



Two evaluation studies conducted in parallel

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
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Anne C K Quah ¹, Lorraine V Craig ¹

Ban on menthol-flavoured tobacco products predicts cigarette cessation at 1 year: a population cohort study

Michael O Chaiton ^{1,2}, Ioana Nicolau,^{1,2} Robert Schwartz,² Joanna E Cohen,³
Eric Soule,⁴ Bo Zhang,^{2,5} Thomas Eissenberg⁶

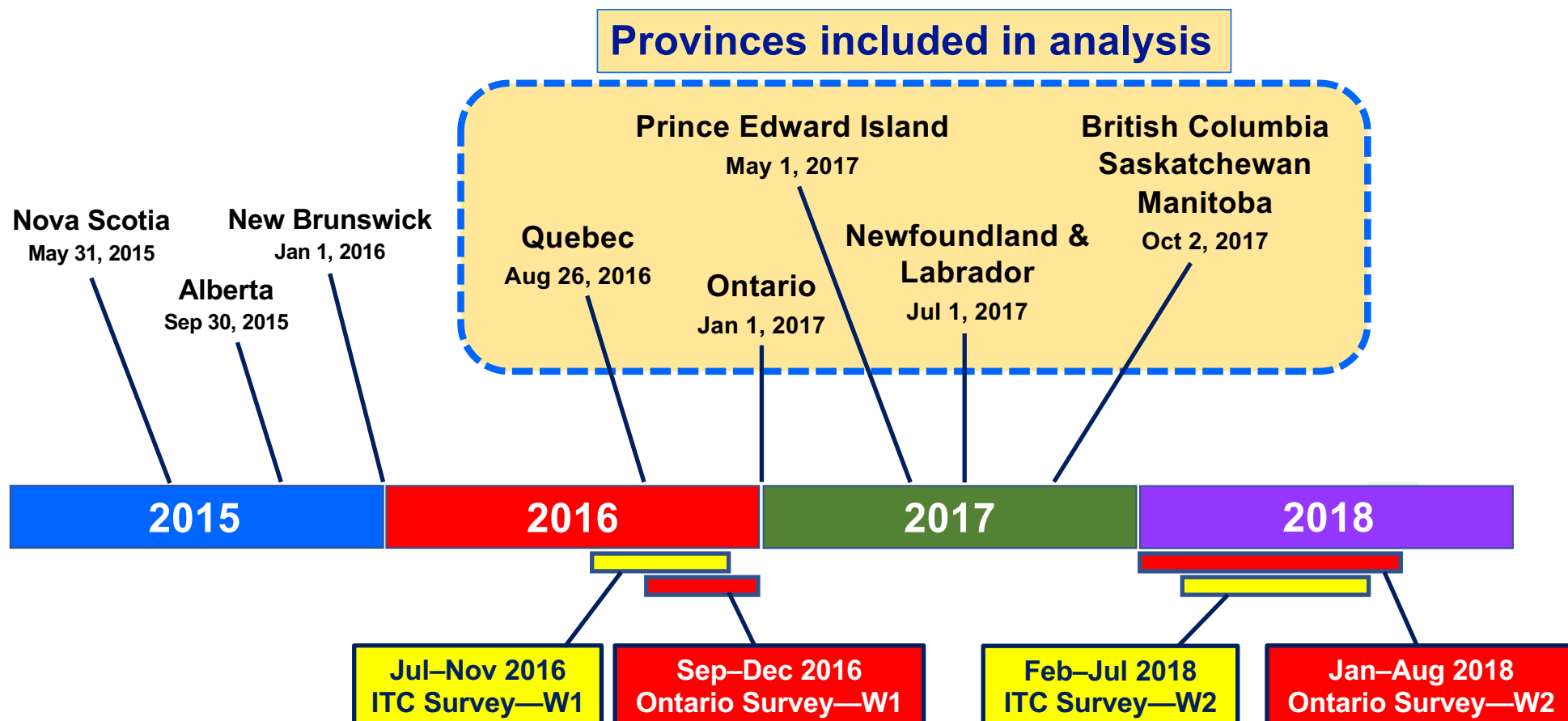
**ITC Canada Survey: 1,236 smokers
across 7 provinces including Ontario**

**Ontario Menthol Ban Survey:
1,084 smokers in Ontario**

Pooled analysis

Both studies had very similar cohort design, methods, and measures, and timing of pre- and post-surveys was nearly identical, so appropriate to combine the data in a pooled analysis

Pre-post evaluation in 7 provinces (83% of Canada)



What was the quit rate after the menthol ban?

Natural Experiment:

- Menthol smokers were affected by the ban
- Non-menthol smokers were not. They are the “control/comparison” group.

Menthol Smokers	Non-Menthol Smokers	Difference (95% CI)	95% CI	p
22.3%	15.0%	7.3%	2.1 – 12.5%	0.006

The 22.3% of menthol smokers who quit is NOT a measure of the impact of the menthol ban. But the DIFFERENCE in quit rates between menthol smokers and non-menthol smokers (the “control/comparison” group) IS an estimate of the impact of the menthol ban.

Conclusion:

Menthol smokers were significantly more likely to quit

Projections of additional quitting if/when the US bans menthol cigarettes

Step 1: Obtain the number of menthol smokers in the U.S. from the 2019 National Survey on Drug Use and Health (NSDUH)

	Number of menthol smokers in the United States (2019)
All adult smokers	18,328,597
Black adult smokers	5,222,907

Projections of additional quitting if/when the US bans menthol cigarettes

Step 2: Multiply by the effect of the menthol ban on increasing quitting

	Percentage of Canada's menthol smokers who quit vs. non-menthol smokers		Number of menthol smokers in the United States (2019)		Projected Number of US smokers who would quit	95% Confidence Interval
All adult smokers	7.3%	X	18,328,597	=	1,337,988	384,901 – 2,291,075
Black adult smokers	7.3%	X	5,222,907	=	381,272	109,681 – 652,863

Projections from the Canadian menthol ban:
If/when the U.S. bans menthol cigarettes an
additional 1,337,988 smokers would quit,
of whom 381,272 would be Black smokers.

Summary: When Canada banned menthol cigarettes...



- Menthol smokers were significantly more likely to have quit after Canada's menthol ban than the control group of non-menthol smokers. The difference of 7.3% is the estimate of the impact of the menthol ban.
- If a US menthol ban would have the same impact as the Canadian ban:
An additional 1,337,988 smokers would quit, of whom 381,272 would be Black smokers
- No additional purchasing from illicit sources among menthol smokers compared to non-menthol smokers after the ban (ITC analyses at Society for Research on Nicotine and Tobacco annual meeting, March 2022)
- The impact will be even greater if the US menthol ban includes cigarillos/small cigars.

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