HEALTH CARE POLICY AND LAW

Association of Ontario’s Ban on Menthol Cigarettes With Smoking Behavior
1 Month After Implementation

The province of Ontario, Canada, implemented a full menthol cigarette ban on January 1, 2017. To date, there has been no population-wide, systematic evaluation of the association of the implementation of a menthol ban with smoker behavior. Assessments of perceived behavioral responses to hypothetical menthol flavor bans are useful; however, there is no guarantee that individuals will follow through with their planned behaviors. This study compares respondents’ planned behavior before the ban with actual behavior 1 month after the ban.

Methods | Eligible participants were residents of Ontario 16 years or older who had smoked at least 1 menthol cigarette in the past year and were past-month smokers. A total of 325 participants were recruited using random-digit dialing of residential telephone numbers from September 12 through December 31, 2016. Participation rate for the random-digit dialing was 44.1%, with a 6.7% refusal rate among known eligible participants, consistent with an established provincial health monitoring survey. Participants were contacted for follow-up beginning 1 month (February 1, 2017) after the implementation of the ban (January 1, 2017) through an online survey (206 recontacted [63.4%]). Those who were unavailable for follow-up did not differ by level of menthol smoking, age, sex, income, educational level, or smoking characteristics. Planned reaction to the ban, actual behavior at 1 month after the ban, and planned future reaction beyond 1 month after the ban were compared. Oral consent was obtained from all participants, and the analytic data set was deidentified. This study was approved by the research ethics board of the University of Toronto, Toronto, Ontario, Canada.

Results | A total of 325 participants participated in the study (181 [55.7%] male; 143 [44.0%] female; mean [SD] age, 47.1 [0.9] years). Before the ban, most menthol smokers (123 [59.7%]) said that they would switch to or only use nonmenthol cigarettes, but only 51 (28.2%) had done so at follow-up (Table). In contrast, a larger proportion (60 [29.1%]) attempted to quit compared with only 30 (14.5%) who said they would do so. Similarly, a larger proportion (60 [29.1%]) reported using other flavored tobacco or e-cigarette products (menthol was not banned in e-cigarette products) compared with their preban plans (12 [5.8%]). After the ban, participants were less likely to anticipate using other flavored products. Of those who made a quit attempt, 16 (80.0%; 95% CI, 56.3%-92.5%) of those who primarily smoked menthol cigarettes at baseline suggested that the ban affected their decision to quit at least a little compared with 10 (25.6%; 95% CI, 14.1%-41.0%) of those who smoked menthol cigarettes only occasionally. Before the ban, 1 individual (0.3%) suggested trying to switch to marijuana and 4 (1.2%) suggested adding menthol to cigarettes separately using flavor cards, oils, or papers as substitutes for the lack of menthol, but none reported planning to use these substitutes in the future.

Discussion | This study is, to our knowledge, the first evaluation of the immediate association of a menthol cigarette ban with behavior change. Actual behaviors contrast sharply with planned behaviors. Although a substantial decrease in menthol cigarette use was observed, there was a considerable increase in use of flavored e-cigarettes and cigars. Furthermore, 29.1% of menthol smokers attempted to quit smoking shortly after ban implementation. Because previous studies have found an expected rate of 0.5 quit attempts and a 7.7% abstinence rate during a 6-month period in this population, this finding suggests that the ban substantially increased quit attempts. Few smokers used aftermarket additive flavorings, and there was no increase in the use of contraband tobacco. Limitations of this study include the unique demographics of menthol cigarette users and the lack of evaluation of the impact of the ban on nonmenthol smokers.

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smokers in Canada, where menthol cigarettes comprise 5% of cigarette sales4,5 compared with 30% in the United States6 and use is not concentrated among black Canadians.3 The initial results suggest that removing menthol tobacco from the market is a feasible strategy that may influence cessation behavior, although differences between menthol users in Ontario, Canada, and other jurisdictions may affect the potential influence of a ban.

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Invited Commentary

Local Movement to Ban Menthol Tobacco Products as a Result of Federal Inaction

The article by Chaiton et al1 in this issue of JAMA Internal Medicine is the first empirical confirmation that banning the sale of menthol tobacco products is good for public health. The investigators surveyed individuals in Ontario, Canada, who smoked menthol cigarettes before and 1 month after the province implemented a full menthol cigarette ban on January 1, 2017. They found that 40% of menthol smokers attempted to quit smoking and 12% succeeded, substantial increases over historical levels and higher than the percentage who predicted that they would try to quit before experienc-
In June 2017, the city and county of San Francisco prohibited the sale of all flavored tobacco products, including menthol.3

This move was too much for the tobacco industry. Shortly after Mayor Ed Lee signed the new law in San Francisco, with $700 000 from tobacco giant RJ Reynolds, a group of self-proclaimed concerned citizens and local grocers announced that they were going to force a referendum on the new law to oppose government overreach and to protect freedom of choice.10 Their Let’s Be Real San Francisco collected enough signatures to force a popular vote on the ordinance on the June 2018 ballot.

Far from a group of concerned citizens, Let’s Be Real is led by a tobacco industry executive and attorneys from a law firm with longstanding ties to the industry. According to official filings, the principal officer of the committee is David Spross, not of San Francisco but of Winston-Salem, North Carolina. Spross is vice president of state government relations at tobacco company RJ Reynolds. Attorneys from the well-connected law firm Nielsen Merksamer (which represents RJ Reynolds and Altria) are serving as treasurer and assistant treasurer, respectively, of the campaign.

This situation is a replay of the industry’s 1983 referendum campaign to overturn San Francisco’s then-new law that limits smoking in the workplace and public places. (Nielsen Merksamer worked on that one, too.) Despite being outspent more than 10 to 1, health advocates successfully defended the ordinance, which subsequently encouraged states and communities around the world to create smoke-free environments.

What about the FDA? They are still thinking about what to do, which means that meaningful action on menthol and flavors is years away, if ever.

In the meantime, as with clean indoor air and tobacco tax policy, the action will occur at the local and state levels. On the basis of the 1983 experience, a win in San Francisco could substantially accelerate the movement to end the sale of menthol and flavored tobacco products, making the FDA increasingly irrelevant.

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Hypoglycemia in Hospice Patients With Type 2 Diabetes in a National Sample of Nursing Homes

Approximately one-quarter of the US population die in nursing homes, where end-of-life care is of variable quality. In particular, it is unknown whether patients with chronic illness, such as diabetes, continue to receive burdensome testing and treatment after transitioning to hospice care in nursing homes. Experts and the American Diabetes Association recommend relaxing glycemic control target levels for patients with diabetes and advanced disease and eventual discontinuation of medications as patients near death to avoid hypoglycemia. Hypoglycemia causes symptoms of weakness, diaphoresis, confusion, shakiness, and dizziness, and is a potentially preventable cause of suffering among hospice patients. Whether nursing home patients with type 2 diabetes on hospice are assessed for dysglycemia, receive insulin or oral hypoglycemic medications, or experience hypoglycemia and hyperglycemia has not previously been described.

Methods | We conducted a retrospective cohort study of patients older than 65 years with type 2 diabetes admitted to Veterans Affairs (VA) nursing homes between January 1, 2006, and June 30, 2015, using linked laboratory, pharmacy, and administrative data. We identified patients with type 2 diabetes by International Classification of Diseases, Ninth Revision (ICD-9) code or glycated hemoglobin values greater than 6.5%. We excluded patients with type 1 diabetes by ICD-9 code. For patients with multiple admissions during the study period, we chose the last admission. We used descriptive statistics to analyze demographic variables, comorbidities, and diabetes management (laboratory testing and drug administration), and stratified the cohort by whether patients received insulin while on hospice. We analyzed the cumulative incidence of hypoglycemia (glucose <70 mg/dL [to convert to mmol/L, multiply by 0.0555]), severe hypoglycemia (glucose <50 mg/dL), hyperglycemia (glucose ≥400 mg/dL), and the competing risk of death among all hospice patients and among patients treated with insulin vs patients not treated with insulin. This study was reviewed and approved by the University of California, San Francisco Committee on Human Research.

Results | The study cohort included 20 329 hospice patients (Table), 98% of whom were men (n = 19 991). Hospice patients had an 83% 100-day mortality rate (n = 16 791 deaths), and a median length of stay of 10 days. Eight percent of patients in the cohort received insulin (n = 1687). Among patients treated with insulin, mean baseline glycated hemoglobin levels were higher than patients not treated with insulin (7.4% vs 6.8%; P < .001), and the mortality rate at 100 days was lower (61% vs 85%; P < .001). Patients treated with insulin had more frequent glucose tests (mean 1.7 glucose tests/d, vs 0.6 glucose tests/d among patients not treated with insulin; P < .001). The cumulative incidence of hypoglycemia (glucose <70 mg/dL) among all patients, accounting for the competing risk of death, was 12% at 180 days, and that of severe hypoglycemia (glucose <50 mg/dL) was 5% (Figure). Among patients treated with insulin, 38% experienced hypoglycemia and 18% experienced severe hypoglycemia at 180 days. The highest risk of hypoglycemia occurred in the first 20 days of admission. The cumulative incidence of hyperglycemia (glucose ≥400 mg/dL) at 180 days was 9% in all patients, higher in the group treated with insulin (35%).

Discussion | Despite guidelines that stress avoiding hypoglycemia in hospice patients with diabetes, we found that 1 in 9 nursing home patients with type 2 diabetes experienced hypoglycemia (glucose <70 mg/dL) while 1 in 20 experienced severe hypoglycemia (glucose <50 mg/dL) while on hospice. The risk of hypoglycemia was highest among patients treated with insulin, one-third of whom experienced hypoglycemia. Patients treated with insulin lived longer and experienced more hyperglycemia than patients not treated with insulin, which suggests that clinicians may be choosing to continue insulin for those hospice patients with a longer life expectancy and more severe diabetes at hospice admission. Nevertheless, hypoglycemia is not consistent with a goal of comfort, and these data demonstrate suboptimal avoidance of dysglycemia.