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CATCH My Breath: Results from an Ontario Pilot Study

Dr. Adam Cole

Monday September 9, 2024

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CATCH My Breath: Results from an Ontario Pilot Study

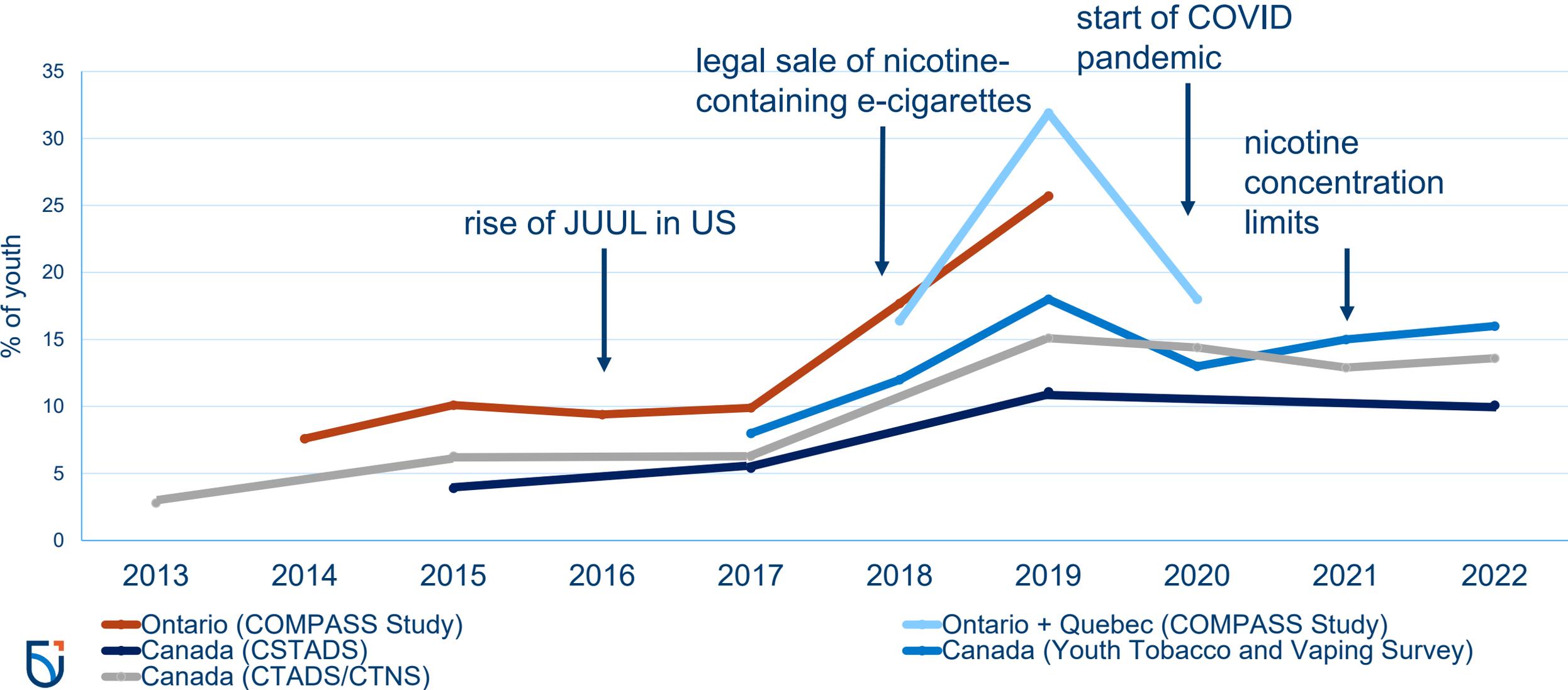
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Learning Objectives

1. Describe the 'CATCH My Breath' program
2. Understand the results of an Ontario high school pilot study
3. Discuss recommendations and next steps

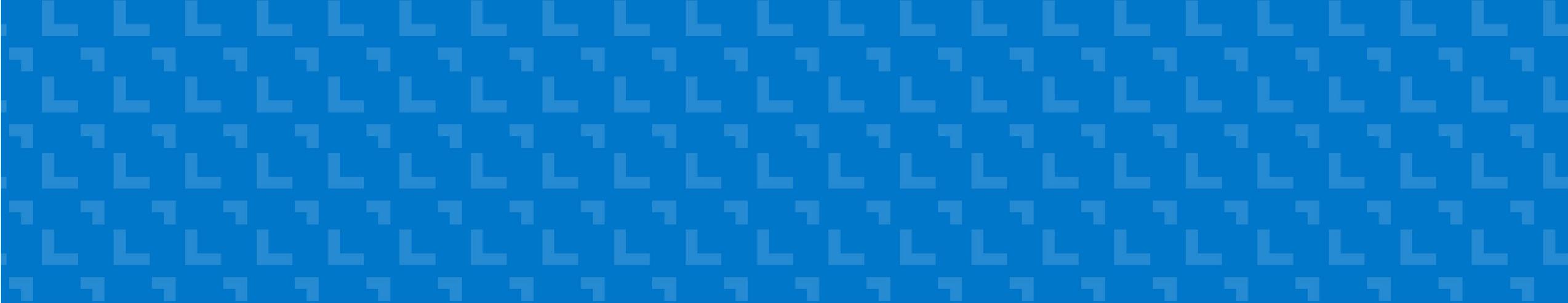
Rise in Youth Vaping



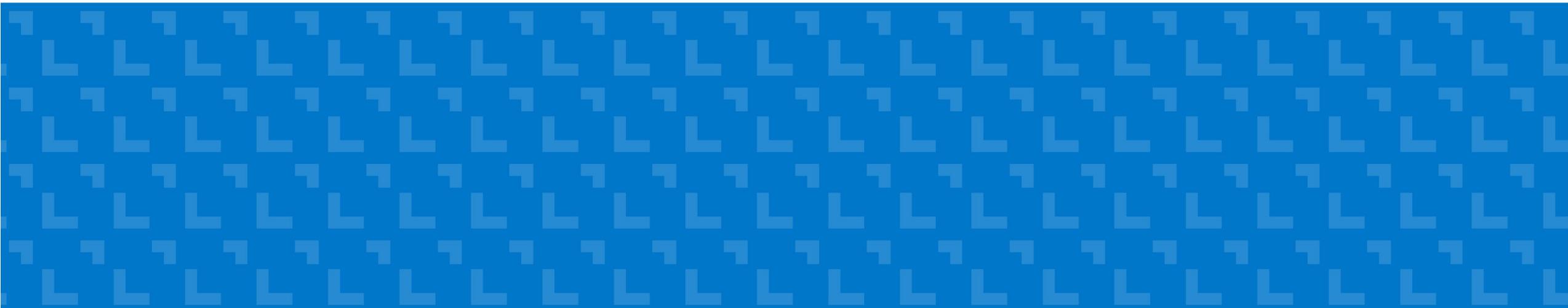
Sources: Cole et al. 2020; Leatherdale et al. 2022; Hammond et al. 2020; Health Canada, 2020; Health Canada, 2022; Government of Canada & Statistics Canada, 2022; Reid et al. 2022; Hammond et al., 2023

Why is this Concerning?

- Nicotine is highly addictive
 - 45% of youth reported vaping within the first 20 minutes of waking up
 - 37% of youth reported vaping more than 20 times per day
- Vaping has negative health effects
 - Irritates cells in the airway and harms lung tissues
 - Poor oral health
 - Insulin resistance and high blood sugar
 - Increased heart rate and blood pressure



What vaping prevention programs have you heard of?





What components do you think should be included in a vaping prevention program?



What is 'CATCH My Breath'?



- A vaping prevention program developed in the United States for students in grades 6-8
- Based on best practices from previous school (tobacco) prevention studies
- Incorporates Social Cognitive Theory
- Four lessons (30-minutes each) delivered by a trained presenter
- Content areas:
 - Components of vapes (e.g., aerosol) and the known and potential health consequences of vaping (e.g., addiction)
 - Discusses social norms (e.g., most students don't vape)
 - Provides strategies to resist peer influences (e.g., practicing refusal skills)
 - Media literacy (e.g., how to recognize and decipher vaping marketing)
 - Discusses school, provincial, and national policies for vaping

What Makes 'CATCH My Breath' Unique?

- Focuses exclusively on vaping
- Presenters trained to deliver the curriculum
- Evidence of effectiveness
 - Significant increase in knowledge of the risks of vaping
 - Significant 45% decrease in vaping initiation at 16-month follow-up

Kelder, S. H., Mantey, D. S., Van Dusen, D., Case, K., Haas, A., & Springer, A. E. (2020). A Middle School Program to Prevent E-Cigarette Use: A Pilot Study of "CATCH My Breath." *Public Health Reports*, 135(2), 220–229. <https://doi.org/10.1177/0033354919900887>



Knowledge Gaps

- Only some vaping prevention programs have been evaluated
 - Generally show short-term increases in knowledge of the components of vapes (e.g., nicotine, aerosol) and potential harms
- Few prevention programs in Canada
 - Only one published evaluation using post-test surveys for quality improvement purposes (SOLVE Mystery Toolkit)
- Programs target middle school students
 - 1/3 of high school students will initiate vaping
 - High school students may require different content

Our Pilot Study

Aim: To test the implementation of 'CATCH My Breath' (CMB) in a sample of high schools in Ontario

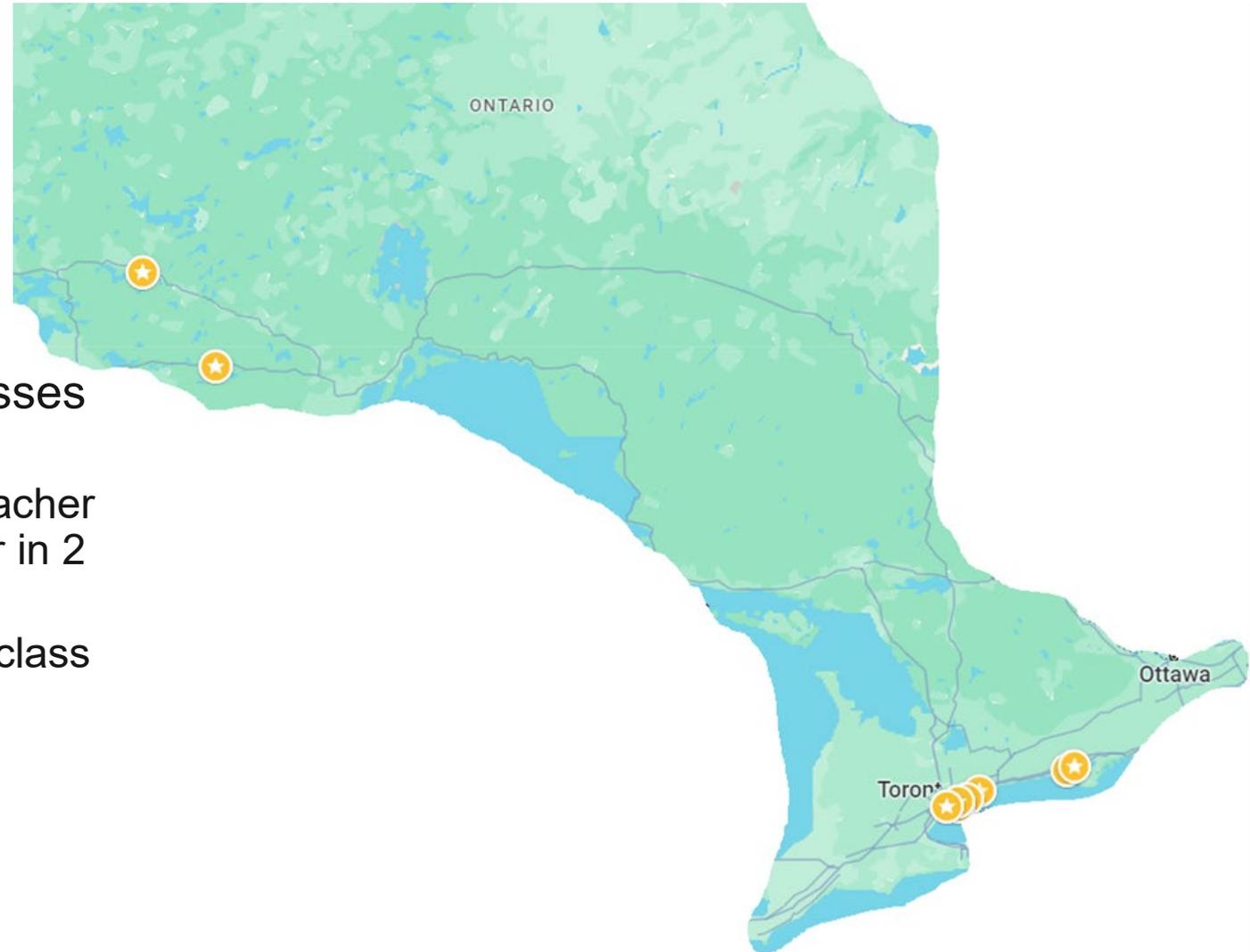
Objectives:

1. Identify youth and presenter perceptions about the appeal, appropriateness, and comprehensiveness of the curriculum
2. Assess *short-term* changes in knowledge of the risks of vaping and attitudes towards vaping
3. Examine the feasibility of implementing the full CMB curriculum in Ontario high schools

Funding: This research was supported by a Proof of Concept Intervention Grant in Primary Prevention of Cancer (Action Grant) of the **Canadian Cancer Society** (grant number 707253) and the **Canadian Institutes of Health Research-Institute for Cancer Research** (grant number POC-181035).

Methods

- Recruited 10 schools across Ontario
- CMB lessons were delivered in 28 classes between October 2022 and April 2023
 - Usually delivered by the classroom teacher (public health nurse & health promoter in 2 schools)
 - Usually delivered in grade 9 Phys-Ed class
 - Most often delivered over 2 days
- Minor revisions to CMB



Methods

Qualitative Data

- 6 focus groups with students (n=40)
- 12 virtual interviews with presenters
- Focus group/interview guides asked about:
 - Facilitators and barriers to implementing CMB
 - Perceptions of the appeal, appropriateness and comprehensiveness of CMB
 - Recommended changes
- Focus groups and interviews were recorded and transcribed
- Thematic analysis identified major themes related to discussion prompts

Quantitative Data

- Pre/post online survey for students
 - Administered during class time up to 1-week before the first lesson and 4-weeks after the final lesson
 - Questions about knowledge of the risks of vaping, subjective norms, vaping behaviours, demographics
- Data from pre/post surveys were linked based on unique codes created by students
- McNemar's Chi-square exact tests of paired proportion assessed significant differences before/after exposure to CMB

Findings & Results

Qualitative Findings

- Appealing aspects of the curriculum
- Appropriateness of the curriculum
- Comprehensiveness of the curriculum
- Suggestions for change

Quantitative Results

- Change in knowledge of the risks of vaping
- Change in subjective norms and intentions to vape

Qualitative Findings

Appealing Aspects of the Curriculum

Engaging activities

“I really enjoyed how it was interactive, there are little activities that we got to do throughout”

(Student, Northern Ontario)

Promoted discussion & reflection

“So one of the kids looked up and they basically said, ‘You know, if you poop your pants after vaping, that’s quite embarrassing. So, why the heck would I try vaping?’ [...] It really hooked the kids [...] I was like ‘Hey, you’re allowed to laugh.’ We laughed. We talked it out.”

(Teacher, Eastern Ontario)

Qualitative Findings

Appropriateness of the Curriculum

Appropriate for their age group

“If you feel you are, you know, mature enough to vape that you should be mature enough to know the risks of consequences of it”

(Student, Eastern Ontario)

Aligns with the Ontario Health and Physical Education curriculum

“Having the discussion about peer pressure, decision making, media tactics all kind of weaving through the concept of the big idea of vaping. I thought we kind of nailed the big ideas of the curriculum.”

(Teacher, Eastern Ontario)

Should be delivered earlier

“You teach it to them before they might start experimenting, before they’re in high school.”

(Students, Northern Ontario)

Qualitative Findings

Comprehensiveness of the Curriculum

Vape ingredients and aerosol

“The thing that stood out to me is the fact that the same thing that is used in vapes, like the aerosol, is also used in air refreshener [sic].”

(Student, Central Ontario)

Health effects and risk of addiction

“The addiction piece I think is probably one of the most important pieces, you know, really talking about how addiction and nicotine can really, you know, mess with your brain. And I think a lot of students are not aware of that. I don’t think they’re aware of just how much nicotine is in vaping products.”

(PHU staff, Eastern Ontario)

Vaping industry tactics

“How subtle the advertisement for vaping can be. Like we were shown different advertisements and some of them didn’t even look like vape ads.”

(Students, Central Ontario)

Develop refusal skills

“I really did like, as I said earlier, the activity around making an excuse or you know, developing those refusal skills [...] there’s other programs out there that are missing that piece, and so I really like that piece of the program.”

(PHU staff, Eastern Ontario)



Qualitative Findings

Suggestions for Change

Reorganizing the content

Updating the content

“[The statistics] weren’t up-to-date, they’re from a few years ago.”

(Student, Northern Ontario)

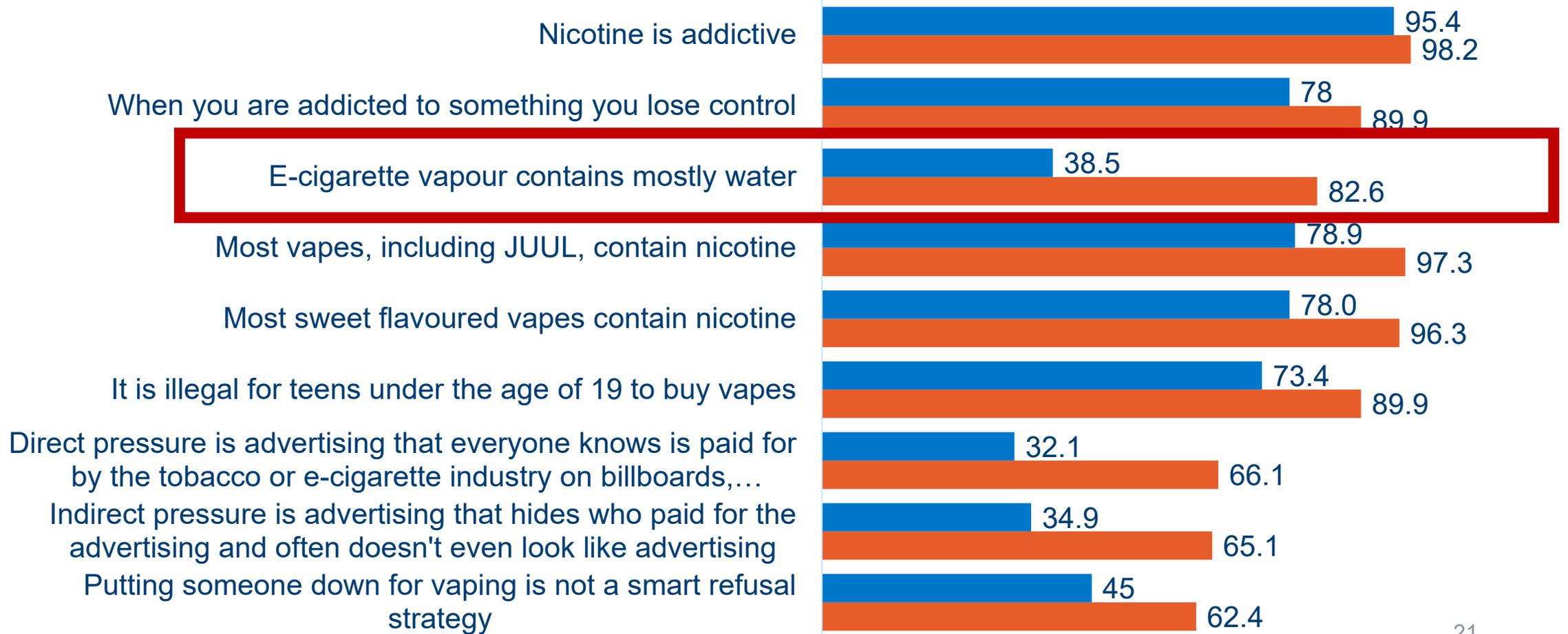
Adding content

e.g., real-life testimonials, long-term effects of vaping, how to support those who want to quit

Quantitative Findings

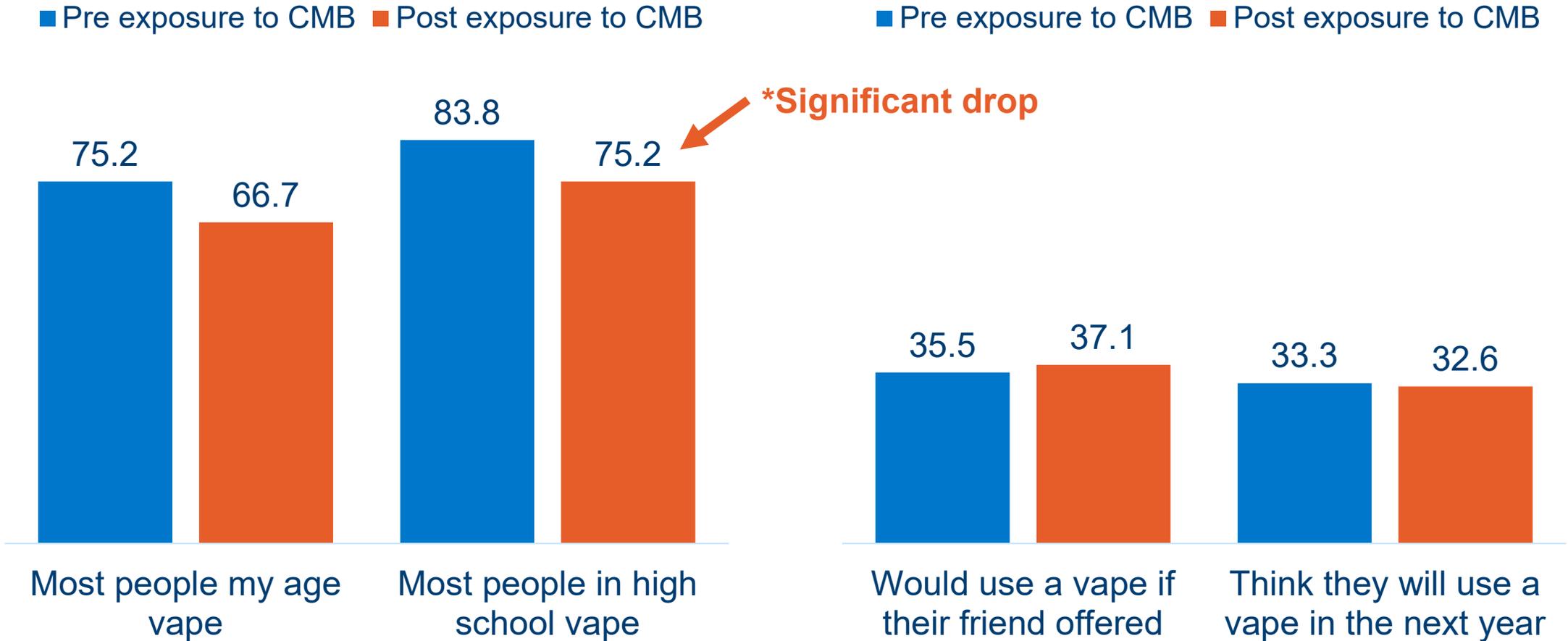
Change in Knowledge of the Risks of Vaping

■ Pre exposure to CMB ■ Post exposure to CMB



Quantitative Findings

Change in Subjective Norms and Intentions to Vape



Implications

- CMB helped to fill a gap in the health education provided in high schools across Ontario
 - CMB was successfully delivered in high schools across Ontario
- Students and presenters generally thought that the curriculum was appealing, appropriate and comprehensive
 - Engaging activities maintained student interest and encouraged discussion and reflection
 - Important aspects of the curriculum included correcting misperceptions about the harmlessness of vaping, building media literacy skills, developing refusal skills
- Students demonstrated significant increases in knowledge of the risks of vaping and modest reductions in perceptions of subjective norms of vaping
- Education interventions can increase knowledge of the risks of vaping
 - Implementing CMB could help to prevent or delay youth vaping initiation

Future Research

- Incorporate and test the recommendations that came out of the pilot study
- Collect additional data to further understand the impact of education interventions on youth knowledge and behaviour
 - Collect data over longer time periods

Next Steps: Opportunity to Participate in a Research Project

- Recently awarded a grant to evaluate the effectiveness of CMB at reducing vaping initiation among high school students
- We're looking for Public Health Units that are interested in being involved in this research project
- What's involved?
 - Your support in recruiting 3-5 high schools in your area that would be interested in participating in the research study
 - Public Health Unit staff would deliver two 60-75-minute lessons during classes in the Winter 2025 and/or Fall 2026 semesters
 - Students will complete a short online survey before exposure to the curriculum and one-year later
- If interested, contact Lucas Fairs: lucas.fairs@ontariotechu.ca

Thank you for attending!

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