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Leveraging the COMPASS Study to Examine the Impact of the COVID-19 Pandemic on Youth Health Over Time

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Health
Canada

Santé
Canada



Acknowledgements

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The original COMPASS study (2012-2015) was supported by a bridge grant from the CIHR Institute of Nutrition, Metabolism and Diabetes (INMD) through the “Obesity – Interventions to Prevent or Treat” priority funding awards (OOP-110788; awarded to SL) & an operating grant from the CIHR Institute of Population and Public Health (IPPH) (MOP-114875; awarded to SL).

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PHAC supports trainees embedded within the COMPASS team.

A SickKids Foundation/CIHR New Investigator Grant supports a Mixed Methods study leveraging COMPASS data to examine the impact of COVID-19 on youth mental health (Awarded to KP)



COMPASS Team:

Investigators: Drs. Scott Leatherdale (PI), Guy Faulkner (BC Lead), Valerie Carson (Alberta Lead), Slim Haddad & Richard Bélanger (Quebec Leads), Karen Patte (Mental Health Lead), & *20+ other co-investigators*

Staff: Kate Battista (Program Manager), Breanne Reel, Alle Butler, Julianne Vermeer, Claude Bacque Dion, Wei Qian, Louis-Philippe Bleau, Cody Davenport, Isabelle Burnet, Kelly Wunderlich, *et al.*

& our **many graduate students & postdoctoral fellows**

Thank you to COMPASS schools, boards, students, & public health partners!

PRESENTER DISCLOSURES

Speaker's Name: **Scott T. Leatherdale**

Nature of relationship(s)	Name of for-profit or not-for-profit organization(s)	Description of relationship(s)
Any direct financial payments including receipt of honoraria	<ul style="list-style-type: none"> a) Public Health Agency of Canada (4500411816) b) Public Health Agency of Canada (4500389510) c) Health Canada (4500421359) 	<ul style="list-style-type: none"> a) Contract for research services focused on COVID-19 and cannabis b) Contract for research services focused on Nunavut c) Contract for research services focused on COVID-19 and vaping
Funded grants or clinical trials	<p>The COMPASS study has been supported by a bridge grant from the CIHR Institute of Nutrition, Metabolism and Diabetes (INMD) through the “Obesity – Interventions to Prevent or Treat” priority funding awards (OOP-110788; awarded to SL), an operating grant from the CIHR Institute of Population and Public Health (IPPH) (MOP-114875; awarded to SL), a CIHR project grant (PJT-148562; awarded to SL), a CIHR bridge grant (PJT-149092; awarded to KP/SL), a CIHR project grant (PJT-159693; awarded to KP), and by a research funding arrangement with Health Canada (#1617-HQ-000012; contract awarded to SL), and a CIHR-Canadian Centre on Substance Abuse (CCSA) team grant (OF7 B1-PCPEGT 410-10-9633; awarded to SL). The COMPASS-Quebec project additionally benefits from funding from the Ministère de la Santé et des Services sociaux of the province of Québec, and the Direction régionale de santé publique du CIUSSS de la Capitale-Nationale.</p> <p>Note: SL is Scott Leatherdale, KP is Karen Patte</p>	Grants associated with funding COMPASS.

PRESENTER DISCLOSURES

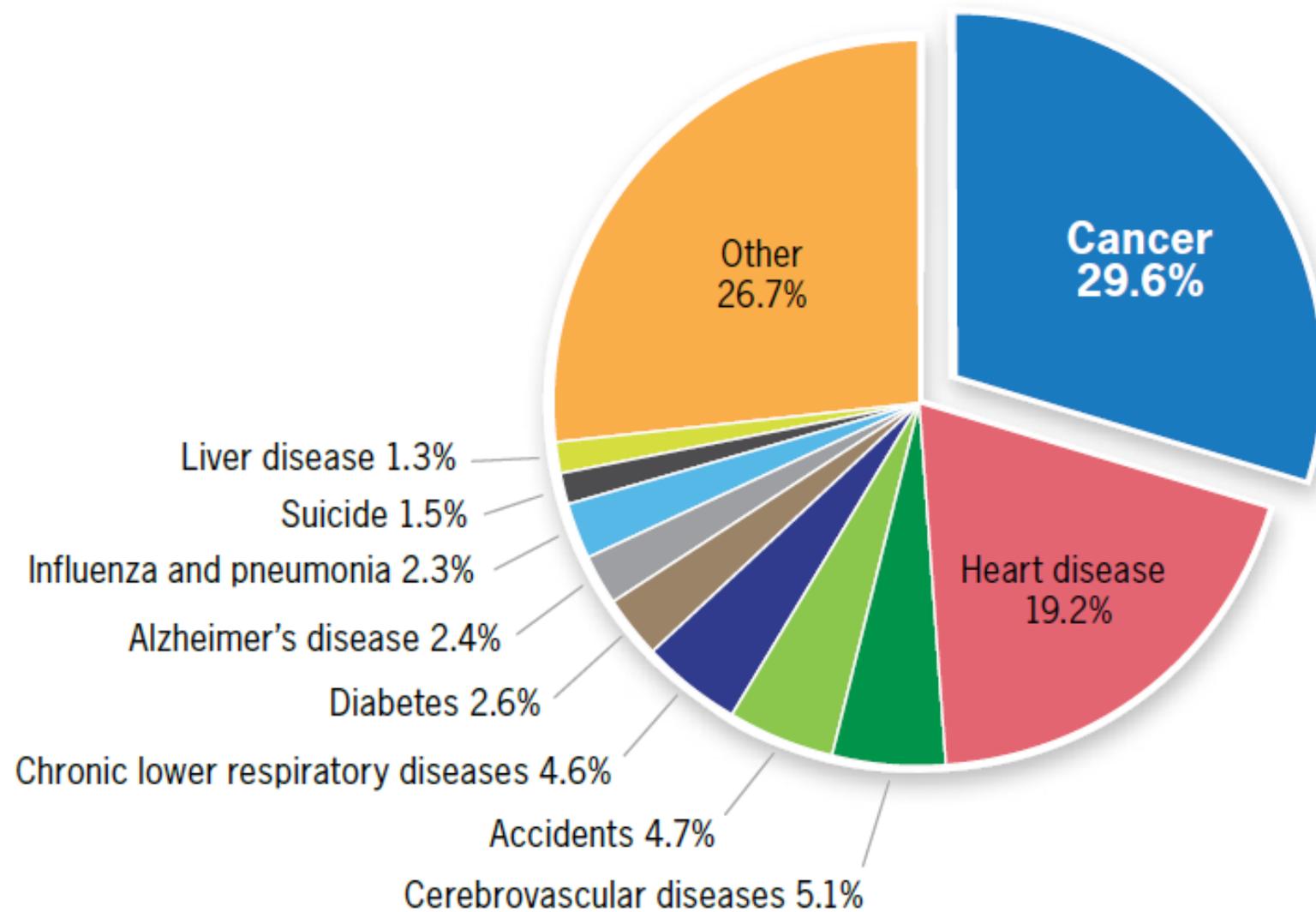
Speaker's Name: **Karen Patte**

Nature of relationship(s)	Name of for-profit or not-for-profit organization(s)	Description of relationship(s)
Funded grants or clinical trials	<p>The COMPASS study has been supported by a bridge grant from the CIHR Institute of Nutrition, Metabolism and Diabetes (INMD) through the “Obesity – Interventions to Prevent or Treat” priority funding awards (OOP-110788; awarded to SL), an operating grant from the CIHR Institute of Population and Public Health (IPPH) (MOP-114875; awarded to SL), a CIHR project grant (PJT-148562; awarded to SL), a CIHR bridge grant (PJT-149092; awarded to KP/SL), a CIHR project grant (PJT-159693; awarded to KP), and by a research funding arrangement with Health Canada (#1617-HQ-000012; contract awarded to SL), and a CIHR-Canadian Centre on Substance Abuse (CCSA) team grant (OF7 B1-PCPEGT 410-10-9633; awarded to SL). The COMPASS-Quebec project additionally benefits from funding from the Ministère de la Santé et des Services sociaux of the province of Québec, and the Direction régionale de santé publique du CIUSSS de la Capitale-Nationale.</p> <p>The mixed methods study evaluating the impact of COVID-19 on youth over time is funded by a Sick Kids Foundation/CIHR New Investigator grant (awarded to KP). KP also holds (as CoPI) a New Frontiers in Research Fund – not related to work being presented in the webinar.</p> <p>Note: SL is Scott Leatherdale, KP is Karen Patte</p>	Grants associated with funding COMPASS.

MITIGATING POTENTIAL BIAS

- Content was peer-reviewed to ensure that principles of scientific integrity, objectivity and balance have been respected

FIGURE 4.1 Proportion of deaths due to cancer and other causes, Canada, 2016



Note: The total of all deaths in 2016 in Canada was 267,213.

Data source: Canadian Vital Statistics Death Database at Statistics Canada; Deaths and age-specific mortality rates, by selected grouped causes, [Table 13-10-0392-01](#).

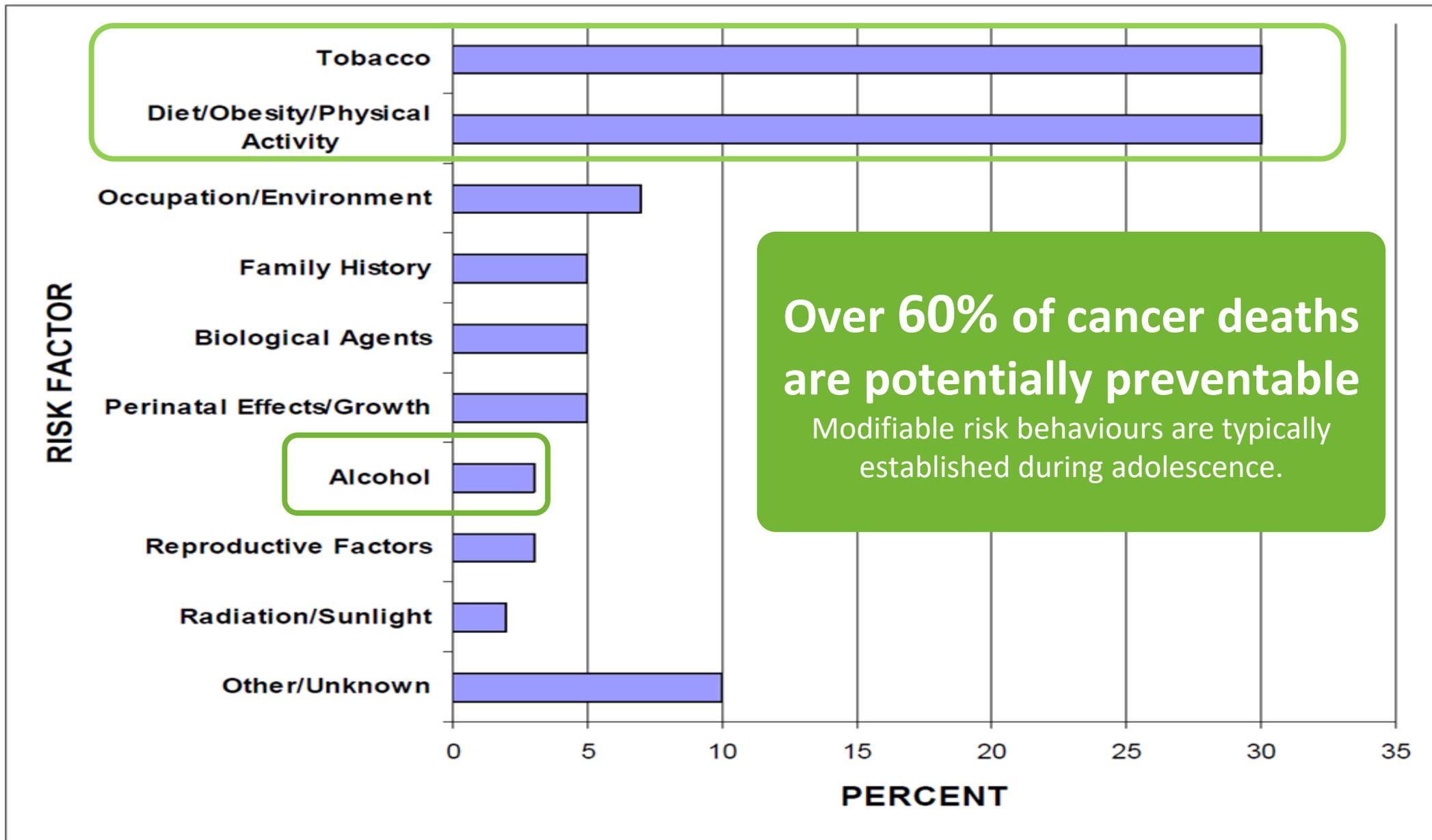


Figure 2: Causes of Cancer Deaths in Developed Countries

Source: Adapted from Adami et al., 2001 and Colditz et al., 1996¹

Within the Canadian context, we have known for a while that variations in school & community characteristics surrounding youth are independently associated with their risk factor profile. For example:

– Substance use:

- cannabis [Costello, Leatherdale, Ahmed et al., 2012],
- tobacco [Leatherdale, McDonald, Cameron et al., 2005].
- alcohol [Heircui, Laxer, Cole & Leatherdale, 2013].
- vaping [Cole, Aleyan & Leatherdale2019].

– eating behaviour [Leatherdale, Stefanczyk, Kirkpatrick, 2016].

– obesity [Leatherdale & Papadakis, 2011]

– physical activity [Hobin, Leatherdale, Manske et al., 2013],

– sedentary behaviour [Leatherdale, Faulkner & Arbour-Nicitopoulos, 2010]

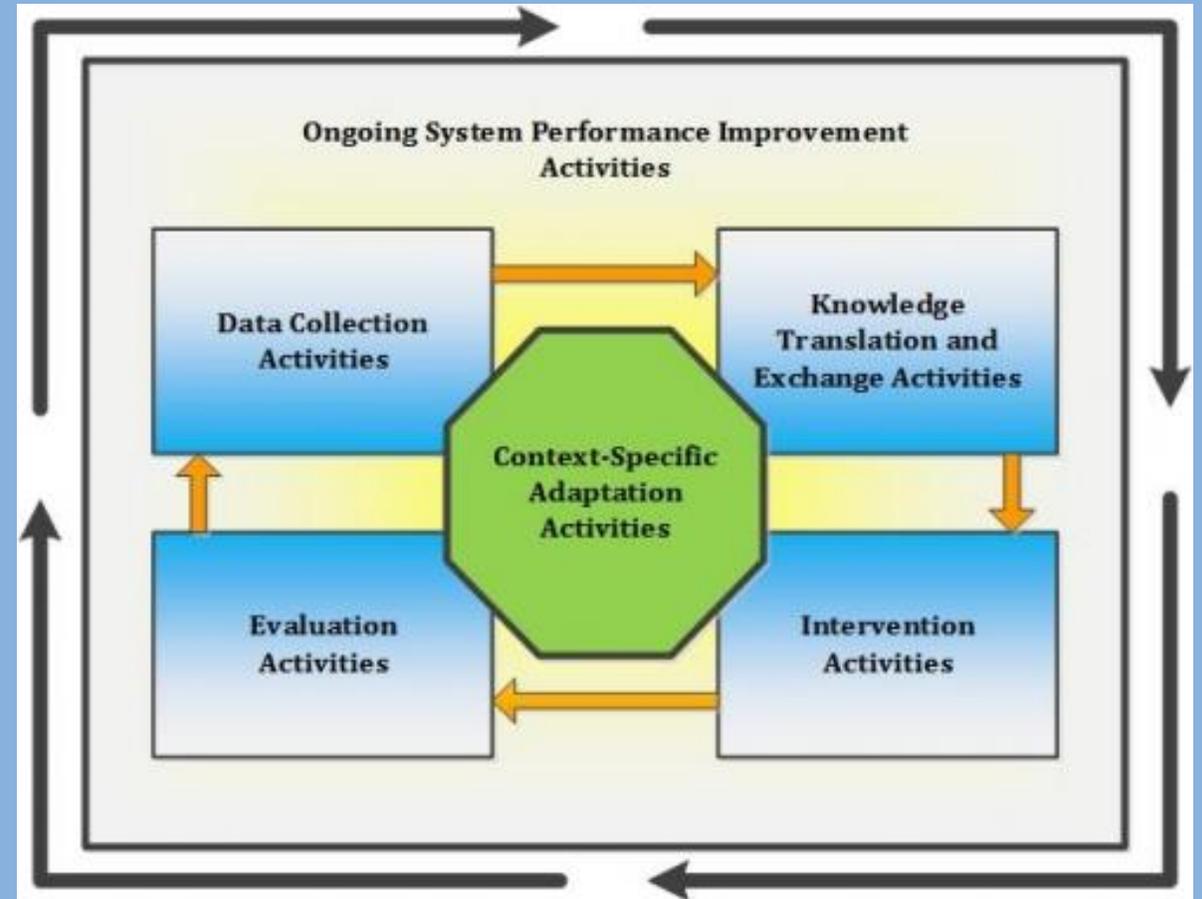


Even PRIOR to COVID-19...

- Timely & accessible longitudinal data on youth were not readily available.
- Comprehensive inventories of important school & community characteristics (*programs, policies, built environment resources*) impacting youth were not systematically collected &/or linked to student data.
- As a result, we know very little about how real-world changes to programs, policies or built environment resources impact youth over time.
(i.e., natural experiments)



Cannabis Use
Obesity
Mental Health
Physical activity
Alcohol use
Smoking
Sedentary behaviour



A learning system designed to:

1. Collect population level longitudinal data from students as they progress through secondary school
2. Evaluate the impact of ongoing real-world natural experiments as programs, policies, & resources in schools, communities, or provinces change over time
3. Share practice-based evidence with relevant stakeholders in real-time, &
4. Share available data with researchers outside of our team

The COMPASS Study

The COMPASS study (2012-2022) is a prospective study designed to collect hierarchical longitudinal data from a rolling cohort of secondary schools and the grade 9 to 12 students attending those schools.

Leatherdale et al., 2014

- Active-information passive consent procedures
 - Active assent for students
- Convenience sample of schools



189

schools across Canada have participated in COMPASS



200,000+

secondary school students across Canada have participated in COMPASS



4

Canadian provinces and 1 territory have participated in COMPASS

The COMPASS Study

N = **75,000+** grade 9 to 12 students + **150+** secondary schools

Provinces:

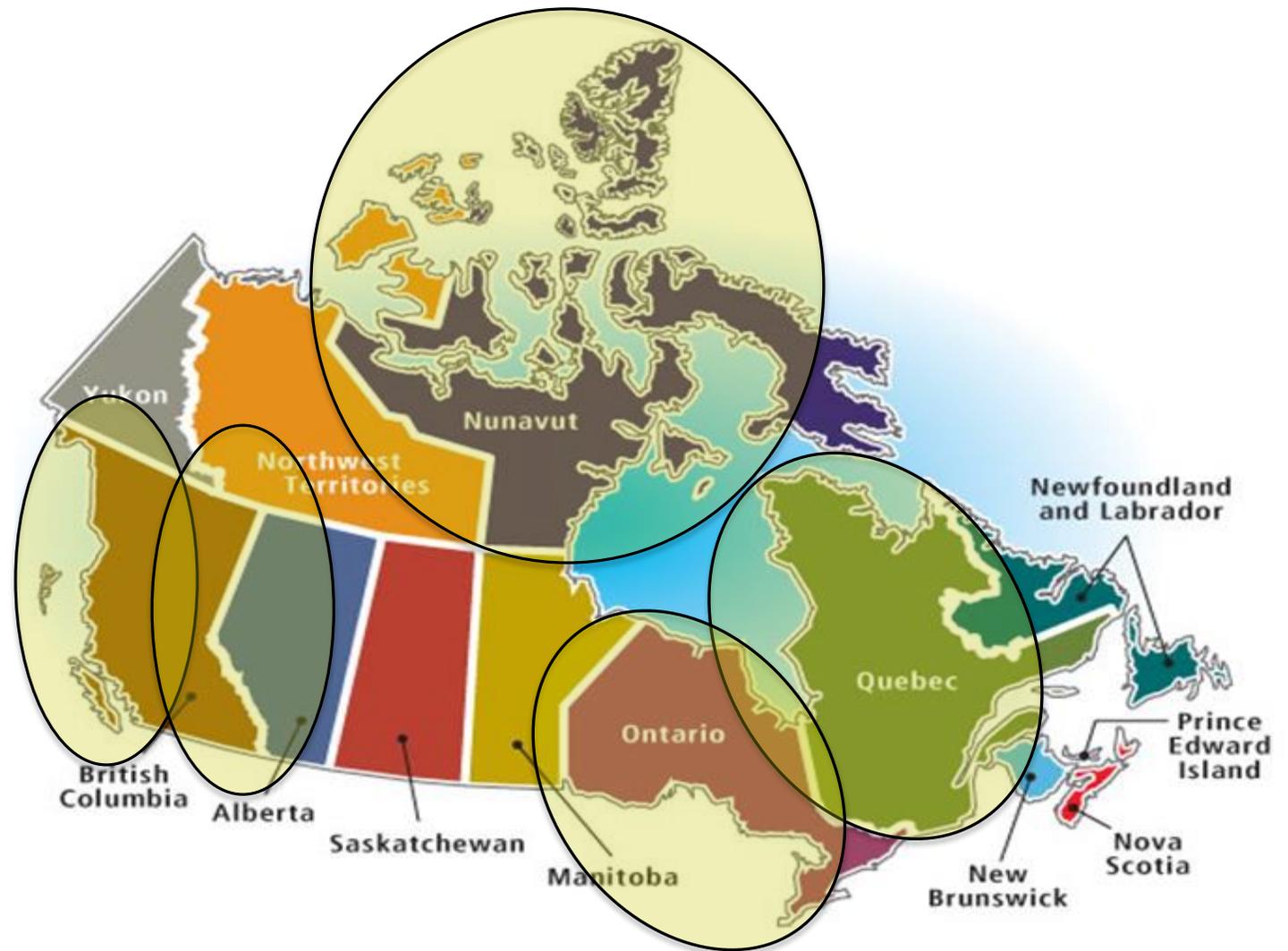
Ontario

Quebec

Alberta

British Columbia

+Nunavut



Measures

Longitudinal data collected once annually at the:

1. School-level:

- School Programs & Policies Questionnaire (SPP)
- School Environment Application (Co-SEA)
- Built Environment Data (C-BED)

2. Student-level:

- Student Questionnaire (Cq)

The image displays several overlapping questionnaires. The primary document is the 'Compass' Student Questionnaire (Cq), which includes instructions such as 'This is NOT a test. All of your answers No one, not even your parents or teachers answered. So, please be honest when you answer.' and 'Mark only one option per question unless otherwise specified.' It features a 'START HERE' arrow pointing to a table for recording birth information. The questionnaire covers various topics:

- 7. How tall are you without your shoes on?** (Please write your height in feet and inches OR in centimetres, and then fill in the appropriate numbers for your height.)
- 8. How much do you weigh without your shoes on?** (Please write your weight in pounds OR kilograms, and then fill in the appropriate numbers for your weight.)
- 9. How much time per day do you usually spend doing...** (Activities include watching TV, playing video games, doing homework, talking on the phone, surfing the internet, texting, and sleeping.)
- 26. YESTERDAY, from the time you woke up until the time you went to bed, how many servings of meats and alternatives did you have?** (Includes cooked fish, chicken, beef, pork, or game meat, eggs, nuts or seeds, peanut butter or nut butters, legumes (beans), and tofu.)
- 27. YESTERDAY, from the time you woke up until the time you went to bed, how many servings of vegetables and fruits did you have?** (Includes pieces of fresh vegetable or fruit, salad or raw leafy greens, vegetables, dried or canned or frozen fruit, and 100% fruit or vegetable juice.)
- 28. YESTERDAY, from the time you woke up until the time you went to bed, how many servings of milk and alternatives did you have?** (Includes milk, fortified soy beverage, reconstituted powdered milk, yogurt or kefir (another type of cultured milk product), and cheese.)
- 29. YESTERDAY, from the time you woke up until the time you went to bed, how many servings of grain products did you have?** (Includes bagels, flatbread such as tortilla, pita, cooked rice or pasta, and corn tortillas.)
- Alcohol and Marijuana Use** section with questions 44-50 regarding frequency and age of first use.

Post-COVID-19 Onset Student Questionnaire

Qualtrics-based online questionnaire designed to facilitate multiple large-scale school-based data collections (in-person or online).

NEW added COVID-19 related measures pertaining to:

- **Form of curriculum delivery** (online, in-person, blended)
- **School protocols/responses**
- **Impact of COVID-19 on health, behaviours & relationships**
(e.g., physical activity, social media, sleep, substance use, getting along with family)
- **Coping behaviours**
- **COVID-19 related concerns**
(e.g., family's ability to pay bills, getting behind in school, health, missing events)
- **COVID-19 related attitudes & knowledge:**
 - Understanding, perceptions of, & compliance with COVID-19 regulations/restrictions
 - Vaccine perceptions & hesitancy
 - Exposure to & source of COVID-19 information



COMPASS School Programs & Policies Questionnaire (SPP)

Online survey completed by school administrator(s) most knowledgeable about their school's health program & policy environment.

For each COMPASS domain, the SPP measures:

- Presence or absence of programs/policies/resources
- *Changes* to school programs/policies/resources

Annually provides information on what was in place previously to:

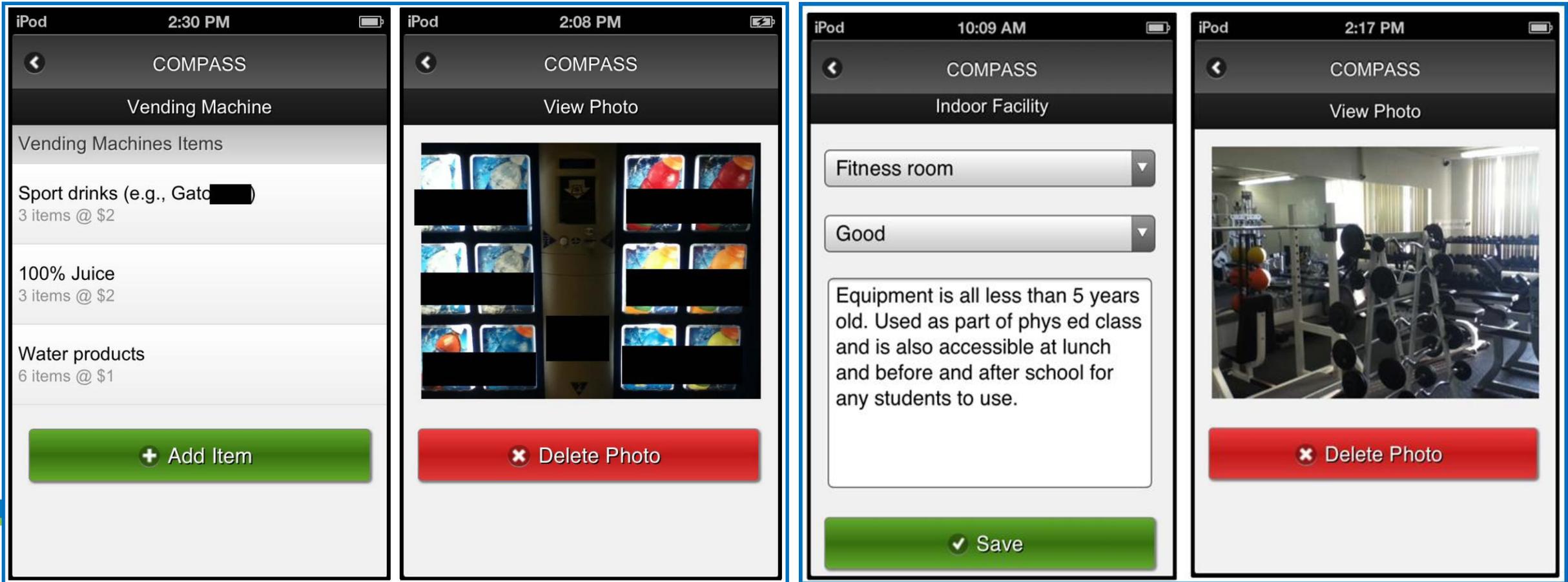
- Assist with recall
- Provide new administrators with background of the school context

The SPP now also measures COVID-19 related programs & policies



COMPASS School Environment Application (Co-SEA)

Direct observation tool on a mobile device to measure the built environment within a school



COMPASS School Environment Application (Co-SEA)

Direct observation tool on a mobile device to measure the school environment within a school



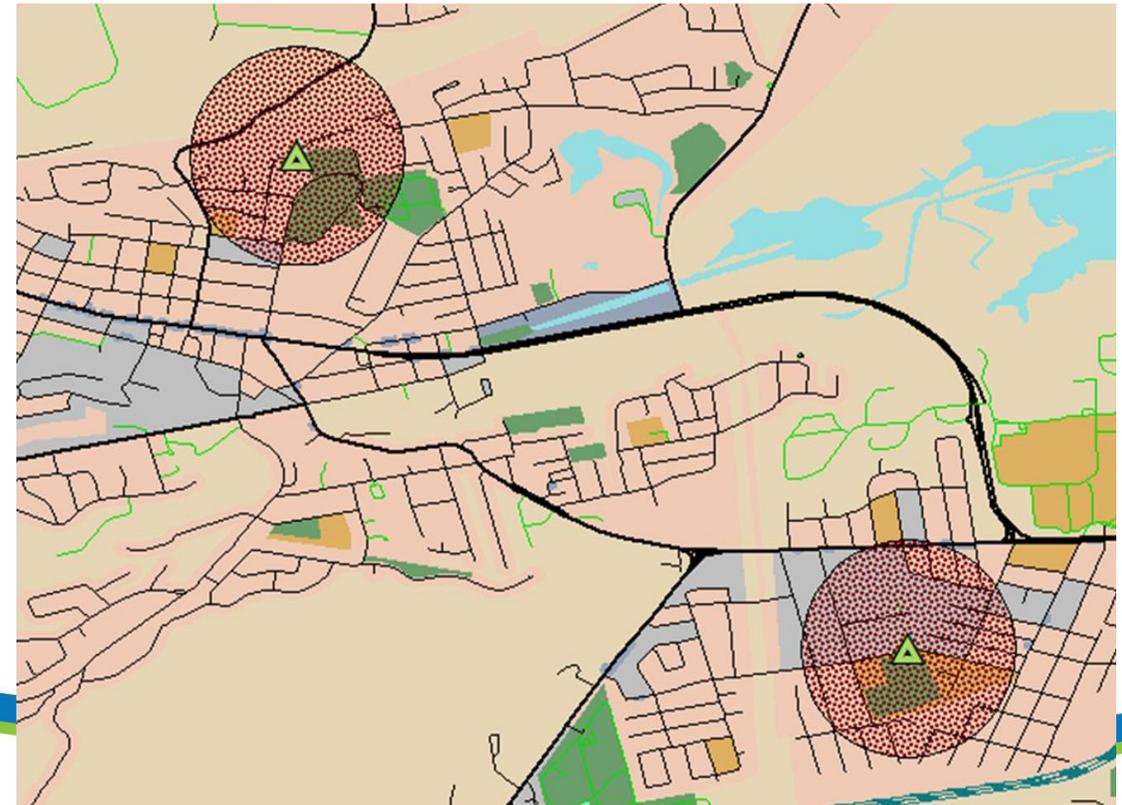
Surrounding School Built Environment Data

CanMap Route Logistics spatial information database provides data layers surrounding each school
e.g. land use/zoning, street networks, & connectivity

Enhanced Points of Interest data resource provides the type & location of different structures
e.g. fitness centres; fast food; tobacco/alcohol/cannabis retailers; parks/green space

Arcview 3.3 software is used to geocode school addresses
& create the desired buffer distance (e.g., 500m, 1km)

Sample of COMPASS built environment data linkage for 500m buffers examining land use and street network connectivity surrounding two schools



Knowledge Mobilization Activities

Research has identified that providing schools with data on their student population and recommendations for action that are relevant to their school context can help schools advance their own prevention agenda

Leatherdale et al. (2009); Cameron et al. (2007)

We use several approaches to share COMPASS data & results:

1. COMPASS School Health Profiles (SHP)
2. COMPASS Knowledge Brokers
3. COMPASS online/social media presence (website, YouTube, Twitter, Instagram)
4. Stakeholder & knowledge user reports & presentations
5. Academic papers & conferences



COMPASS School Health Profile

Bullying Outcomes at 2017-18

Among students at your school:

- ___% have been verbally attacked
- ___% have been victims of cyber-attacks
- ___% have been physically attacked

WHY THIS IS AN ISSUE
Adolescents who have been bullied in grades, carrying weapons, and skipping bullying. Students who are victims of bullying.

RECOMMENDATIONS

- Encourage student-led initiatives speaking out when witnessing bullying by external groups
- Create personal electronic device
- Consider implementing a peer mediation, peer mediation program

<https://www.peermidiationcenter.org.uk/>

Alcohol Use Outcomes at Anyplace school

Among Students at your school:

- 22% reported binge drinking in the last month
- 25% National average*
- 16% reported consuming alcohol mixed with an energy drink in the last year

WHY THIS IS AN ISSUE
Adolescents who have been bullied in grades, carrying weapons, and skipping bullying. Students who are victims of bullying.

RECOMMENDATIONS

- Use a harm reduction approach, and to reduce the harm exposure who drink
- Program includes three phases: (1) booster lessons in Year 2
- http://ndri.curtin.edu.au/research
- Centre for Addiction and Mental Health
- MediSmart.ca: <http://medisrart.ca>
- National Institutes of Health: <http://www.niaaa.nih.gov>

PUBLIC HEALTH UNIT COM
Jane Doe, Public Health Nurse, Any P: (555) 555-5555 E: jane.doe@aphu.com

Healthy Eating Outcomes at Anyplace school

Among Students at your school:

- 8% eat the recommended 7-8 servings of fruits & vegetables per day
- 11% eat the recommended 6-7 servings of grains per day
- 59% eat the recommended 3-4 servings of dairy products per day
- 73% eat the recommended 2-3 servings of meat & alternatives per day
- 54% buy their lunch at school at least once per week
- 19% buy snacks from school vending machines at least once per week

WHY THIS IS AN ISSUE
Youth spend a considerable amount of time sitting throughout the school day. Studies show that increases physical and mental health risks, and...

RECOMMENDATIONS

- Consider creating "screen-free" spaces at school
- Create a screen-time reduction challenge
- Organize school-wide or classroom activity
- Organizations such as Ophree, PHE Canada, and healthy living - your knowie

Sedentary Behaviour Outcomes at 2017-18

Among students at your school:

- Surfing the internet: ___ hours/day
- Watching/ streaming TV shows or movies: ___ hours/day

WHY THIS IS AN ISSUE
Youth spend a considerable amount of time sitting throughout the school day. Studies show that increases physical and mental health risks, and...

RECOMMENDATIONS

- Ensure students before, during, and after school
- Provide student-led activities (e.g., intramural, fitness facility)
- Install private/public restrooms
- Consider one in weight room

Marijuana Use Outcomes at 2017-18

Among students at your school:

- ___% are meeting National Guideline 60 min/d of physical activity*

WHY THIS IS AN ISSUE
Marijuana is one of the most commonly used substances, which will likely result in a large number of youth starting to use marijuana. Research has shown that marijuana use has been shown to negatively impact academic performance, and risk-taking behaviour.

RECOMMENDATIONS

- Create, implement and enforce a school policy on marijuana use
- Incorporate into the curriculum the "Lower Initiative in Substance Misuse (CRISM)"
- Raise awareness of the harms of marijuana alternative* (e.g., ingesting cannabis smoke)

Physical Activity Outcomes at 2017-18

Among students at your school:

- ___% are meeting National Guideline 60 min/d of physical activity*

WHY THIS IS AN ISSUE
Youth spend a considerable amount of time sitting throughout the school day. Studies show that increases physical and mental health risks, and...

RECOMMENDATIONS

- Ensure students before, during, and after school
- Provide student-led activities (e.g., intramural, fitness facility)
- Install private/public restrooms
- Consider one in weight room

Mental Health Outcomes at 2017-18

Among students at your school:

- ___% rate their mental or emotional health as good, very good, or excellent
- ___% report they have a lot to be proud of
- ___% feel competent and capable in activities that are important to them
- ___% report their life is purposeful and meaningful
- ___% are optimistic about their future
- ___% feel engaged and interested in their daily activities
- ___% report supportive and rewarding social relationships
- ___% wouldn't know who to approach at school if they needed help
- ___% felt depressed most days in the last week
- ___% felt nervous, anxious, or on edge on most days in the last 2 weeks
- ___% often have difficulty making sense out of their feelings

WHY THIS IS AN ISSUE
Mentally healthy youth are better able to learn and manage life's challenges. Positive mental health is characterized by engagement and motivation, self-awareness, self-efficacy, hope for the future, and a sense of purpose and belonging. All students can benefit from learning self-regulation and social-emotional skills to better cope with negative emotions, reduce the probability of some mental disorders, and improve the management of disorders that may be biologically determined.

RECOMMENDATIONS

- Use a comprehensive approach in teaching social emotional skills and positive mental health practices involving students, parents, staff, and community partners
- Ensure that all students know where they can go for help locally
- Equip staff with mental health literacy to recognize when students need further support
- Partner with community services and your local public health unit to connect students and align with treatment externally

Year 1 to Year 6 Comparisons for 2017-18

2012-13	2017-18
___% were overweight or obese	___% are overweight or obese
___% ate the recommended number of servings from all 4 food groups	___% eat the recommended number of servings from all 4 food groups
___% met the National guidelines for daily physical activity	___% meet the National guidelines for daily physical activity
___% met the National guideline of 2 hours or less of recreational screen time per day	___% meet the National guideline of 2 hours or less of recreational screen time per day
___% were current smokers	___% are current smokers
___% reported binge drinking within the last month	___% reported binge drinking within the last month
___% had used marijuana within the last month	___% have used marijuana within the last month
___% had been bullied within the last month	___% have been bullied within the last month
___% felt they were a part of their school	___% feel they are a part of their school
___% thought they would complete a post-secondary education	___% think they will complete a post-secondary education

green arrows indicate positive changes, red arrows indicate negative changes

“

Our Board has organized a session for school teams and Public Health Nurses to learn about [COMPASS] research findings and discuss next steps. This proved to be a valuable opportunity for a variety of education stakeholders to learn about the results of the COMPASS questionnaires, plan for knowledge mobilization and goal-setting to make improvements that would support student health and wellness and overall school climate.

-Ontario School Board Administrator



The continuity of data is something that I appreciate and I have shared the data with School Councils since my arrival at this school.

-Ontario School Principal



The easy to read infographic style of the [The COMPASS School Health Profile] makes it quick and easy for staff to quickly identify the [student health] topic they are looking for information on. We also find the comparison data, to our school results over time, between genders, and to the provincial stats useful.

-School Health Promotion Coordinator

”

COMPASS School Knowledge Brokering

GOALS:

- Facilitate interaction between our team, schools, public health units, & community partners
- Assist schools in identifying priorities, determining evidence-informed & context-appropriate actions, & connecting them to resources & partners to mobilize change
- Collect process measures for interventions that were implemented for evaluation



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Sharing our knowledge

The COMPASS Study collects data on a number of youth health behaviours. Using these data, we have created a number of knowledge products. Sharing our findings and producing usable knowledge tools is an important step in working collaboratively to improve youth health. Our knowledge products and resources are provided below:

- [Mental Health](#)
- [Vaping/E-Cigarettes](#)
- [Cannabis](#)
- [Alcohol](#)
- [Obesity](#)
- [COMPASS Quebec: Les adolescents et la COVID-19](#)
- [COMPASS Quebec: Usage de Cannabis par les jeunes du secondaire](#)

Mental Health

2021 University of Waterloo GRADflix Finalist: Gillian Williams PhD research on substance use and mental health

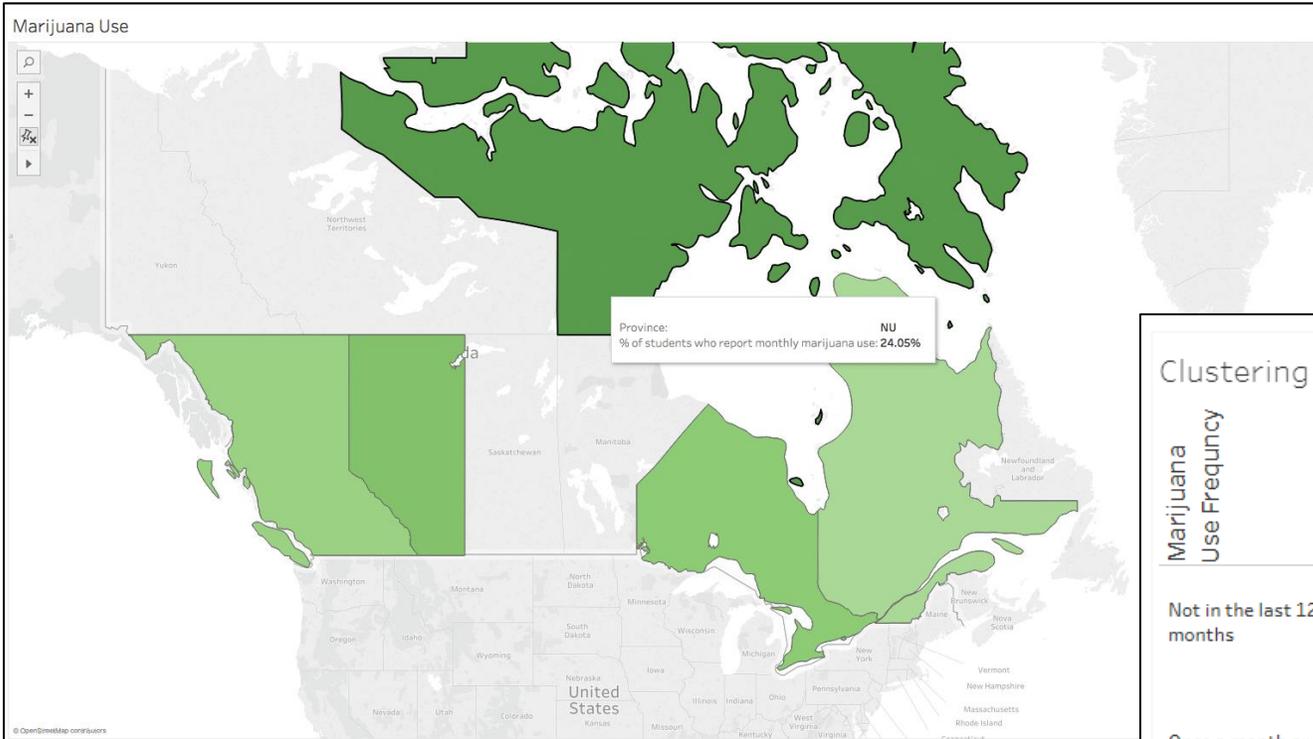
2021 University of Waterloo GRADflix Finalist: Gillian Williams

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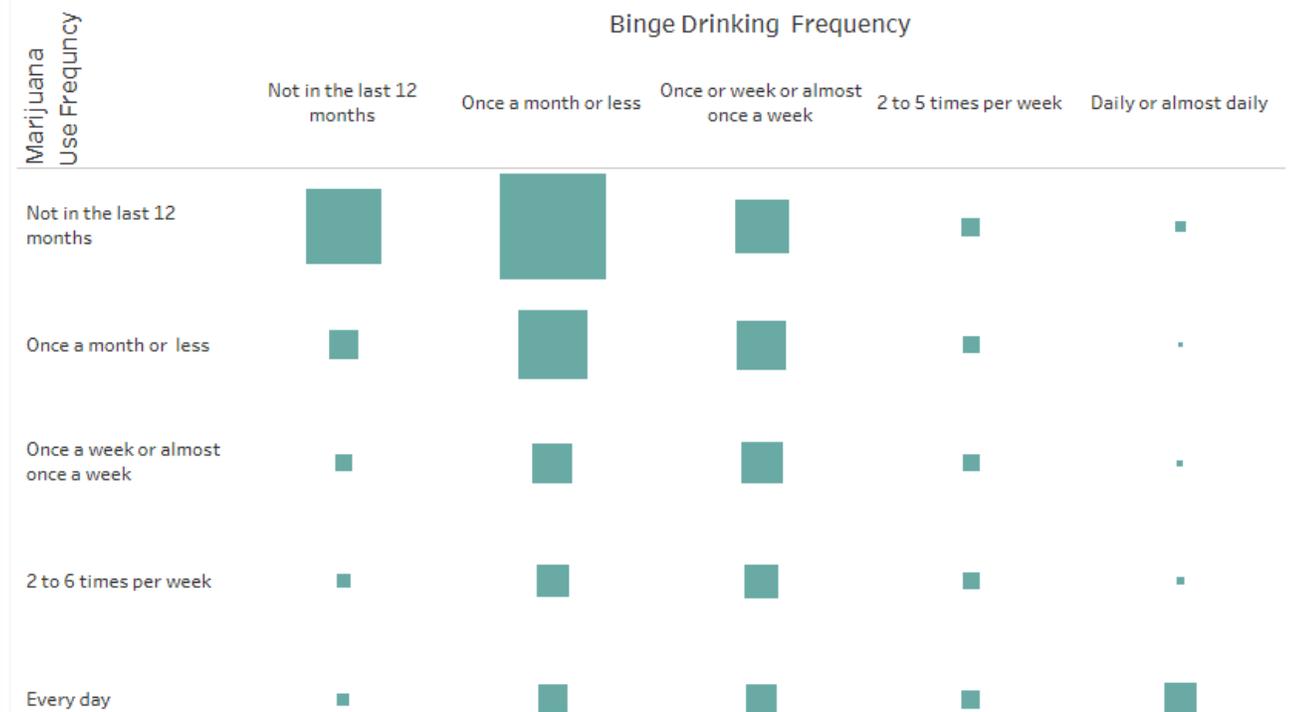


COMPASS Data Visualization Portal

Development of the visualization portal is funded by the **Canadian Public Health Association**



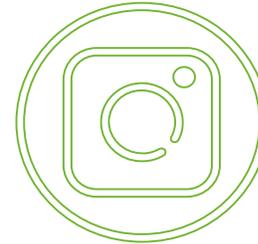
Clustering of Drinking and Marijuana Use



Social Media



@COMPASS_UW
@COMPASS_UBC



@the_compass_study

COMPASS
1,166 Tweets

COMPASS
@COMPASS_UW

The longitudinal COMPASS study (started 2012/13) follows Canadian high school students to better understand how to effectively improve their health trajectories

University of Waterloo compass.uwaterloo.ca Joined March 2015

674 Following 795 Followers

COMPASS @COMPASS_UW · Jun 1
We're launching our youth developed Instagram campaign today to share @COMPASS_UW study results on youth health with youth! Follow along on Instagram @the_compass_study for more!
instagram.com/p/CPIKk4jhVVu/...

Instagram

the_compass_study [Edit Profile](#)

2 posts 82 followers 120 following

The COMPASS Study
Educational Research Center
The COMPASS study (started 2012/13) follows Canadian high school students to better understand how to effectively improve their health.
compass.uwaterloo.ca

Seeking Help
58% of students were reluctant to talk about mental health concerns to an adult at school

ABOUT COMPASS
a longitudinal study following Canadian high school students to better understand how to improve their health.

- SURVEYED 200,000+ STUDENTS
- SPANNING 4 PROVINCES & 3 TERRITORY
- 189 SCHOOLS HAVE PARTICIPATED
- STARTED IN 2012

[SWIPE TO LEARN MORE ABOUT COMPASS](#)

YouTube COMPASS Videos

<https://www.youtube.com/watch?v=3nmjWUiX5fY>



Evaluating COVID-19 as a natural experiment

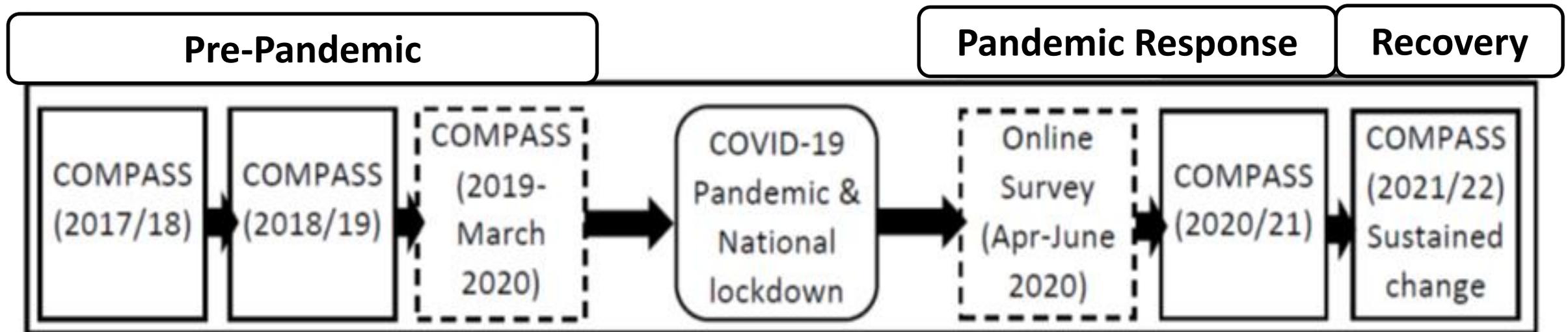
By linking data across study waves COMPASS allows us to determine within individual student change in health behaviours & outcomes from pre-during-mid COVID-19 response

Pre-COVID-19: Year 6 (2017-18) N = 66,500+ students at 124 schools
Year 7 (2018-19) N = 74,500+ students at 136 schools
Year 8 (2019-March 2020) N = ~35,000 students at 51 schools
School Closures

Early lockdown: Year 8 (May-July 2020) N = 9600+ at 51 schools (ON, QC, BC)

2nd/3rd Waves: Year 9 (2020-21) N = 55,000 at 133 schools (ON, QC, BC, AB) ***Current School Year***

Sustained Effect: Year 10 (2021-22)



What types of questions can COMPASS answer?

COMPASS data allow for a number of different analytical strategies for examining each of the outcomes.

Cross-sectional analyses include, but are not limited to:

- Identification of high-risk individuals or high-risk school environments;
- Examination of between-school variability in the different student-level outcomes among students;
- Examination of the co-occurrence of different outcomes; &
- Hierarchical analyses examining the student- & school-level characteristics associated with each outcome.

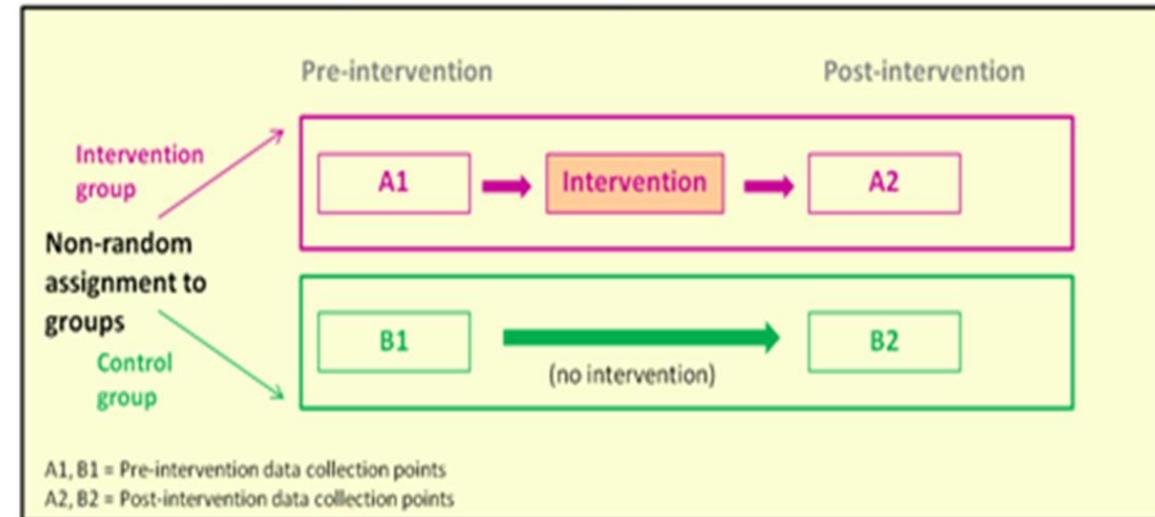


What types of questions can COMPASS answer?

Longitudinal analyses include, but are not limited to:

- The **temporal sequence** for the development of outcomes or co-occurrence of outcomes;
- How changes in **school-, community-, or provincial-level** characteristics (*programs, policies, or built environment resources*) are related to changes in school-level prevalence or individual student-level outcomes over time;
(i.e., natural experiments)
- How **trajectories** of outcomes are predicted by other outcomes (e.g. do increases in cannabis use over time impact anxiety?) & sociodemographic characteristics of students &/or schools.

Classical Quasi-Experimental Design



Value of the system

In this one simple cost-effective system, we can:

- Pivot rapidly to collect large volumes of youth data in our well-established research infrastructure in schools across Canada
- Simultaneously collect repeat cross-sectional & longitudinal data (there is no extra cost for longitudinal data)
- Evaluate the 100s of program/policy changes that occur in COMPASS schools annually across a variety of priority topics (including COVID-19)
- Evaluate the impact that emerging provincial prevention initiatives on youth outcomes over time
E.g., Ontario's distribution plan for legalized cannabis sales, Ontario allowing alcohol sales in grocery stores, etc.
- Explore how changes to federal policies impact youth outcomes over time.
E.g., the legalization of cannabis in Canada, changes to e-cigarette/vaping product regulations, etc.



Opportunities to Collaborate

- COMPASS data is available to other researchers &/or stakeholders willing to collaborate:
 - secure file transfer available at UW
 - de-identified data
- We are willing to share tools and resources when possible
 - e.g., statistical modelling can be provided
- Student projects & trainees are prioritized
- Future funding proposals

Anything that helps advance practice-based evidence & promotes youth health.





Preliminary Substance Results During COVID-19 Pandemic

Using Repeat Cross-Sectional Data Only

Snapshot of some recent substance use data (2015-16 to 2019-20)

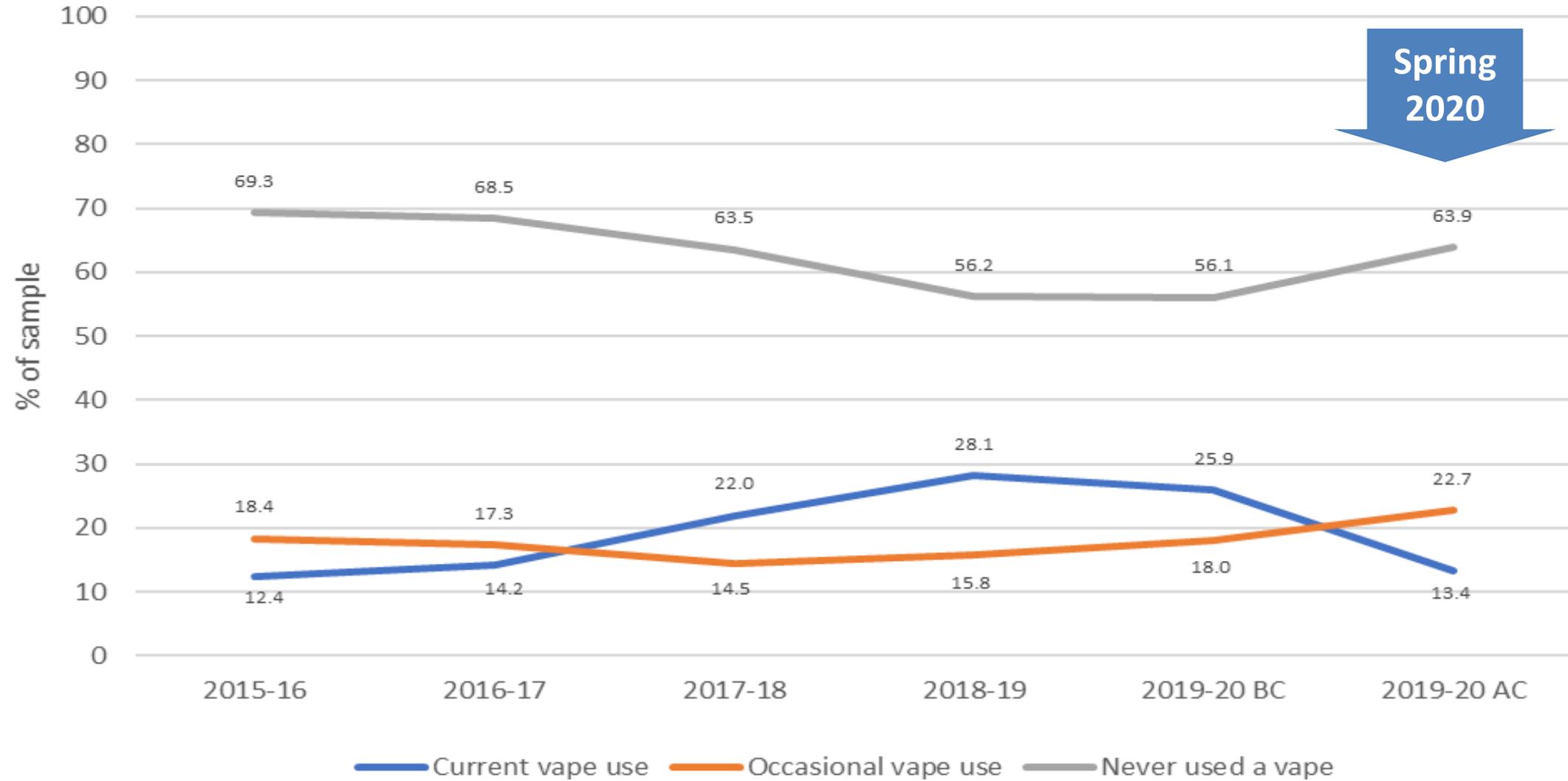
Table 1. School- and student-level sample size by wave in the COMPASS Study (2015-16 to 2019-20).

		Data Collection Cycle [†]					
		2015-16	2016-17	2017-18	2018-19	2019-20 ^{BC}	2019-20 ^{AC}
Students	TOTAL	40436	46862	66434	74501	29770	9630
	Alberta	3330	2982	3243	3301	2160	0
	British Columbia	0	3617	12523	10402	6872	473
	Ontario	37106	34078	31654	30675	8968	3105
	Quebec	0	6185	19014	30123	11770	6052
Schools	TOTAL	81	93	122	136	51	51
	Alberta	9	9	8	8	6	0
	British Columbia	0	5	16	15	9	2
	Ontario	72	68	61	61	18	20
	Quebec	0	11	37	52	18	29

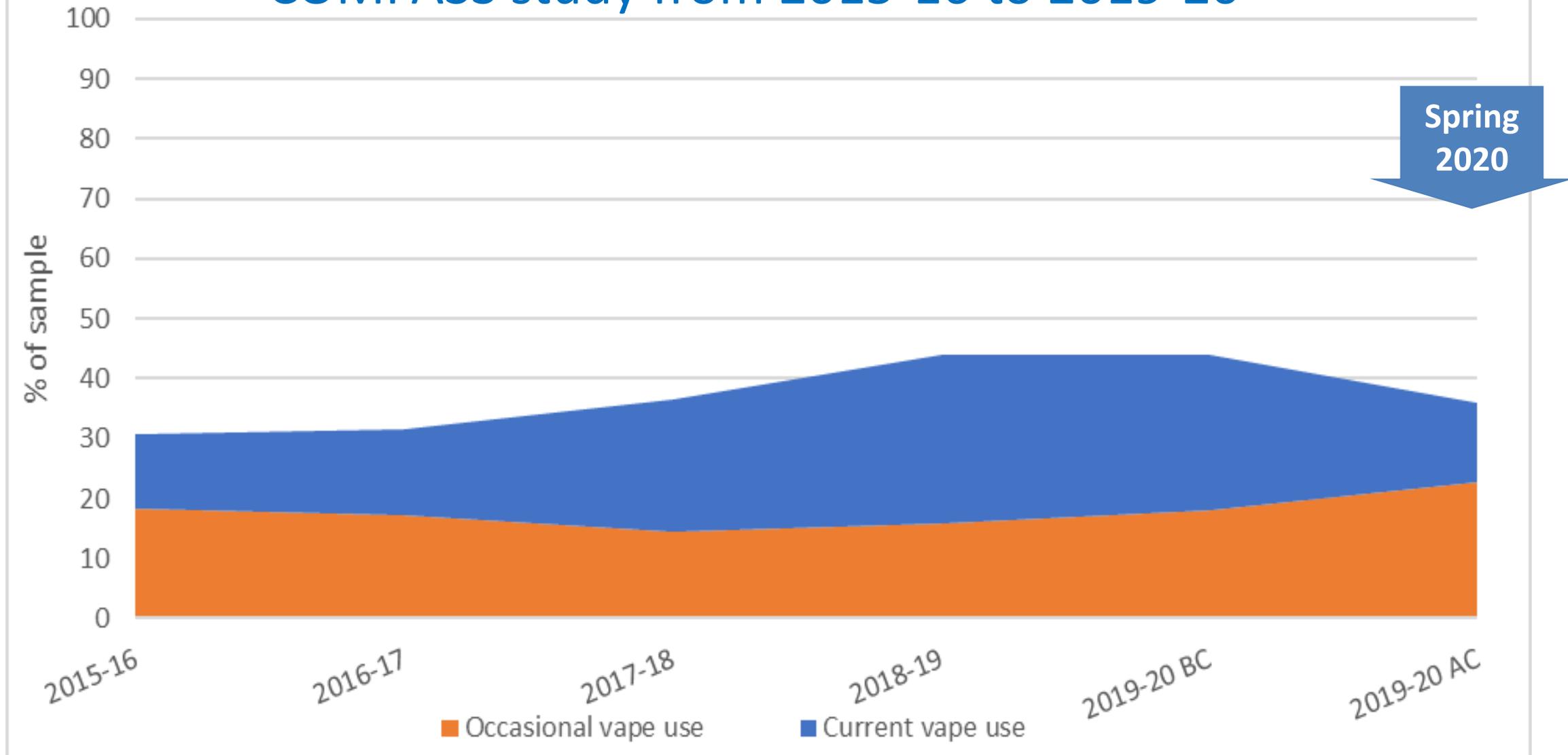
Notes: [†] based on a typical school year, September to May.
 2019-20^{BC} Data collected before the onset of COVID-19 (September to March 10, 2020)
 2019-20^{AC} Data collected after the start of COVID-19 pandemic (April to July 2020)



Vaping frequency among students participating in the COMPASS study from 2015-16 to 2019-20

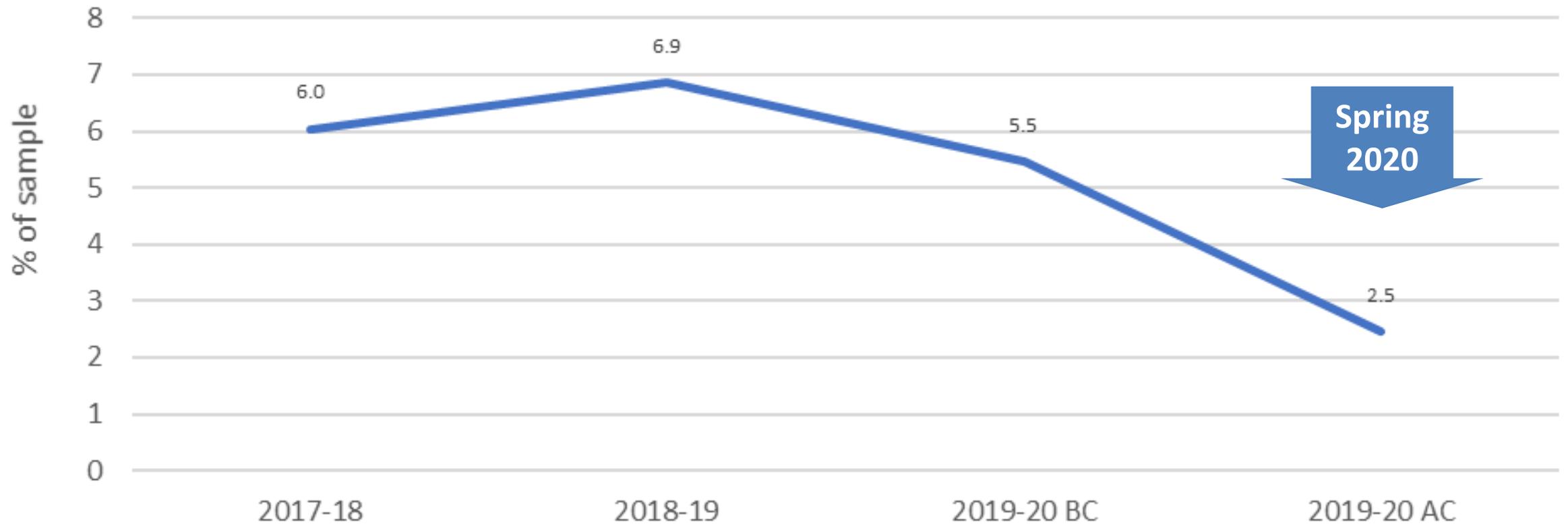


Vaping frequency among students participating in the COMPASS study from 2015-16 to 2019-20

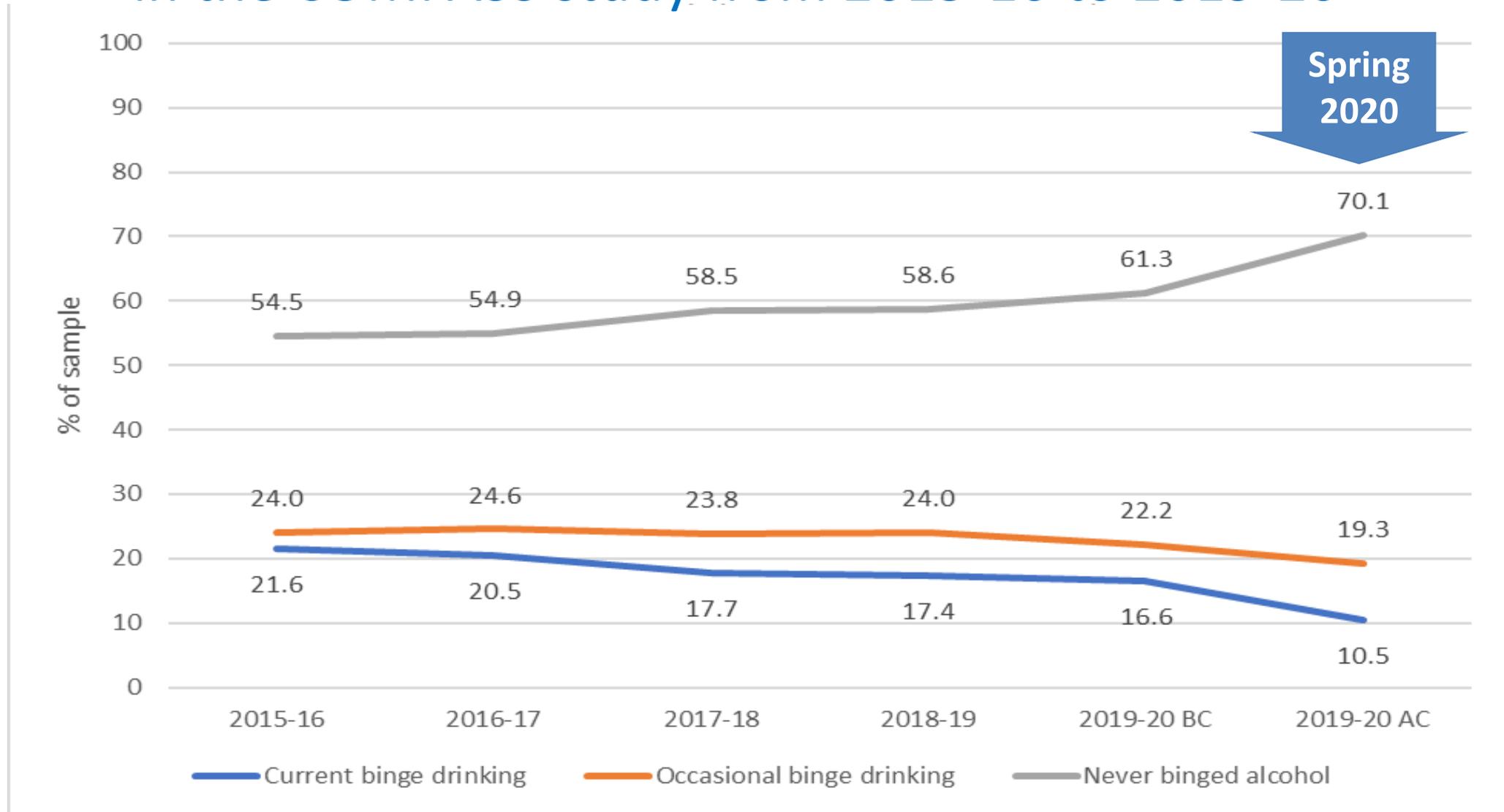


Spring
2020

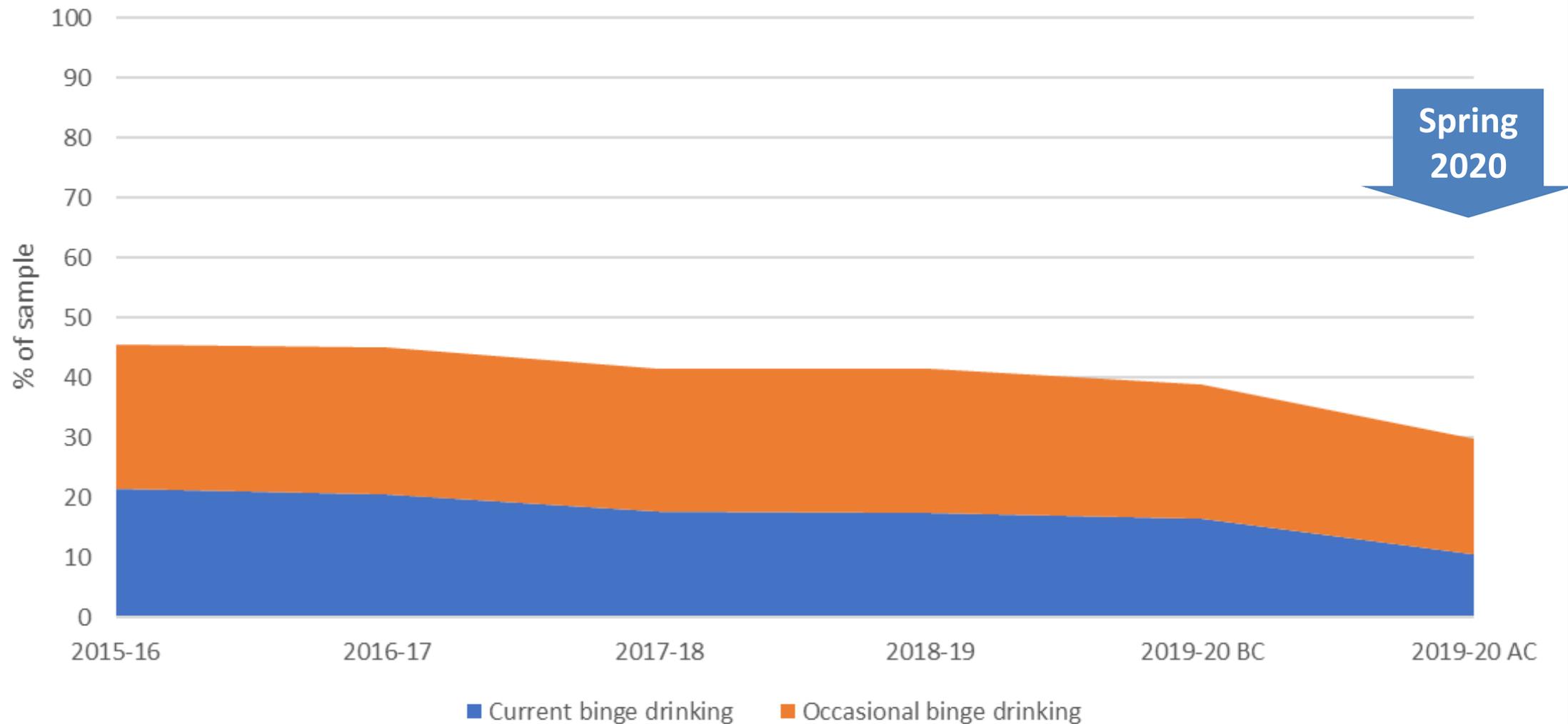
Past 12-month **cannabis vaping** frequency among students participating in the COMPASS study from 2015-16 to 2019-20



Binge drinking frequency among students participating in the COMPASS study from 2015-16 to 2019-20

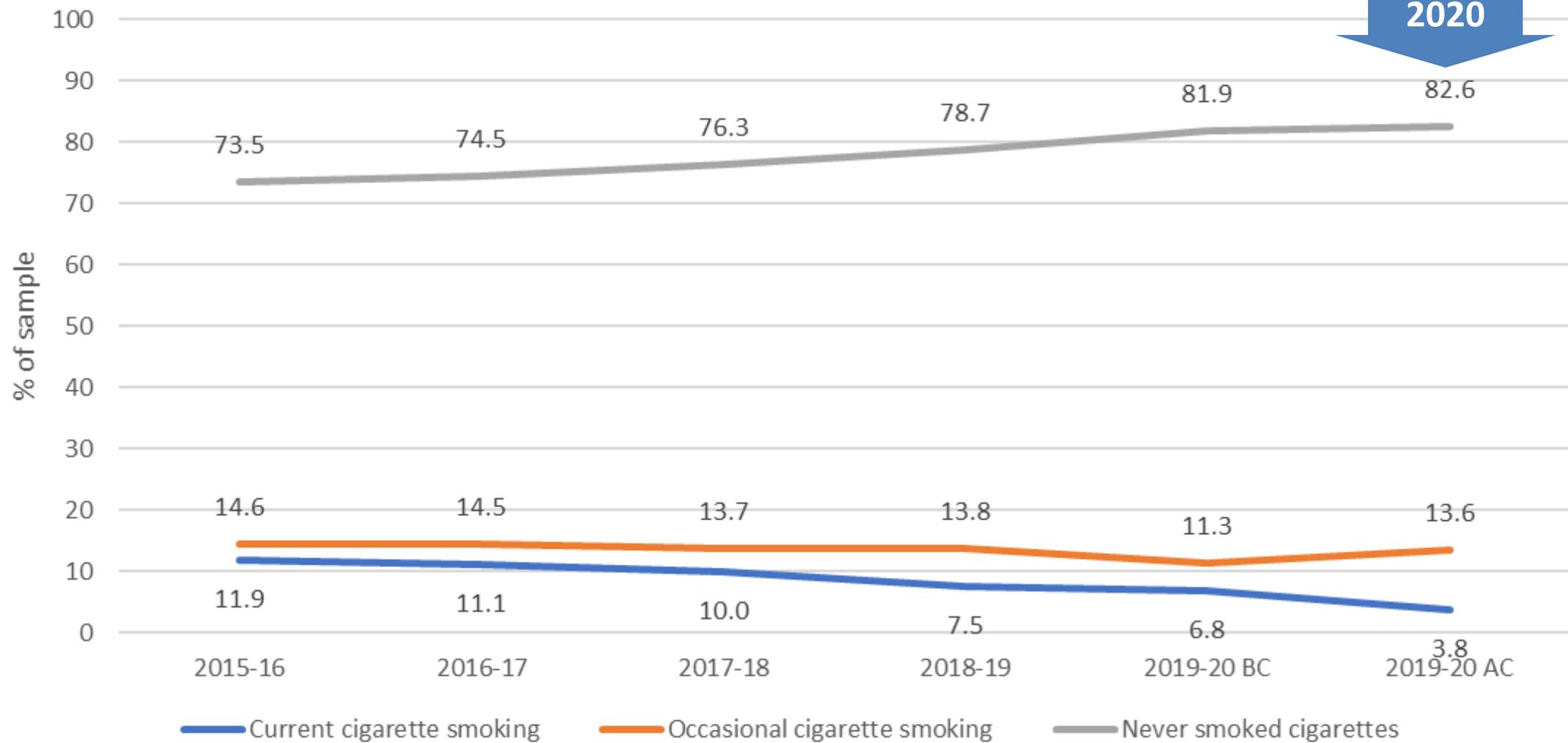


Binge drinking frequency among students participating in the COMPASS study from 2015-16 to 2019-20

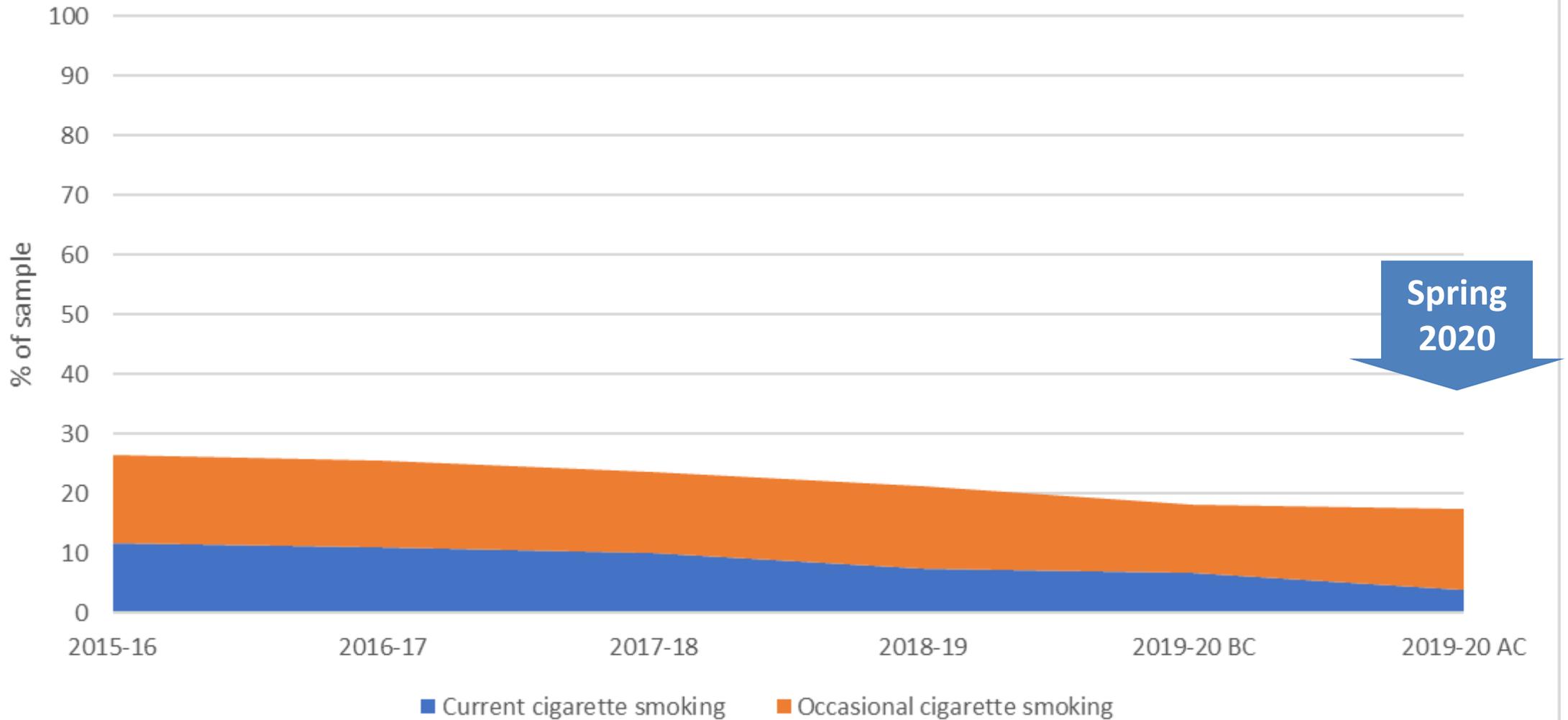


Cigarette smoking frequency among students participating in the COMPASS study from 2015-16 to 2019-20

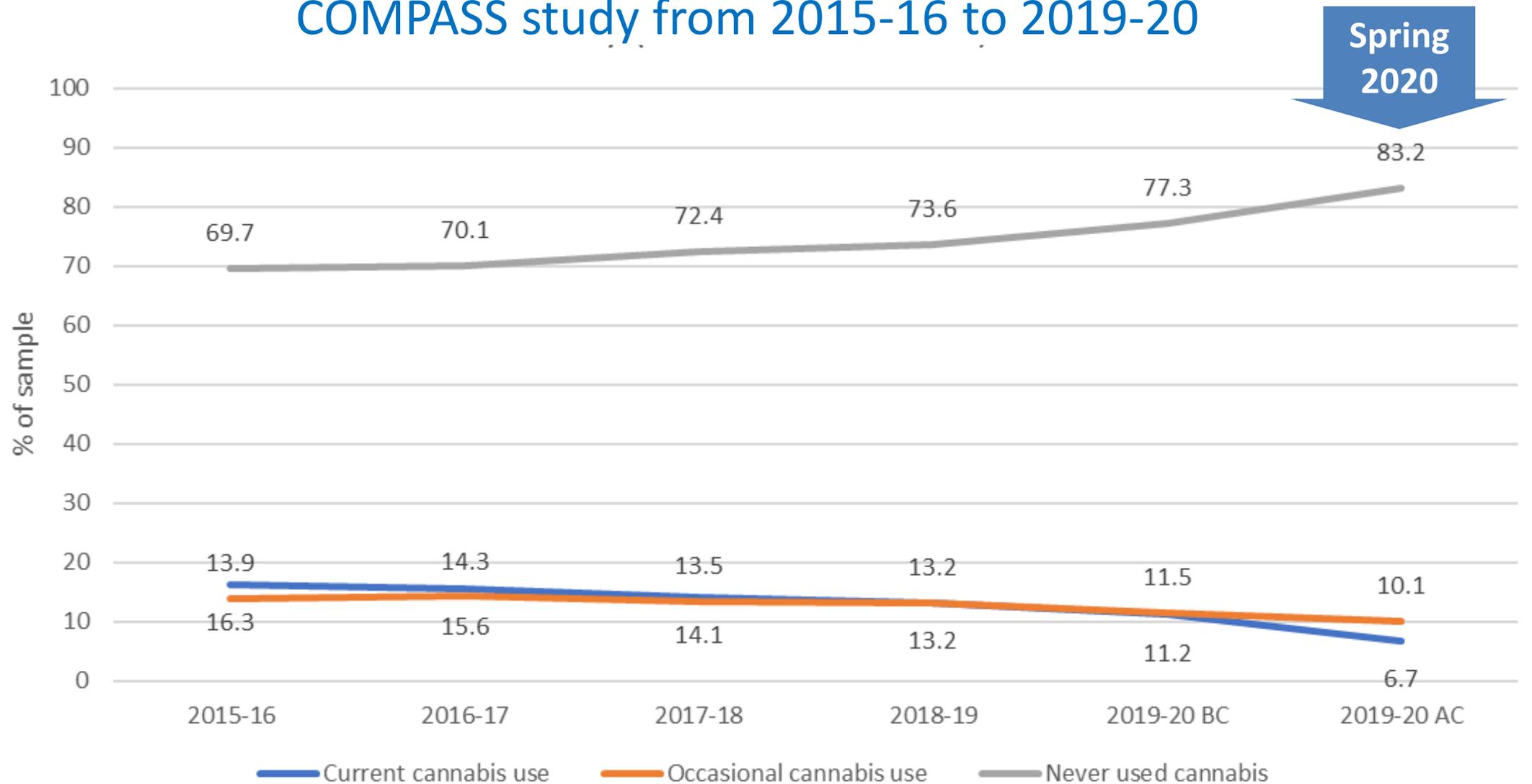
Spring 2020



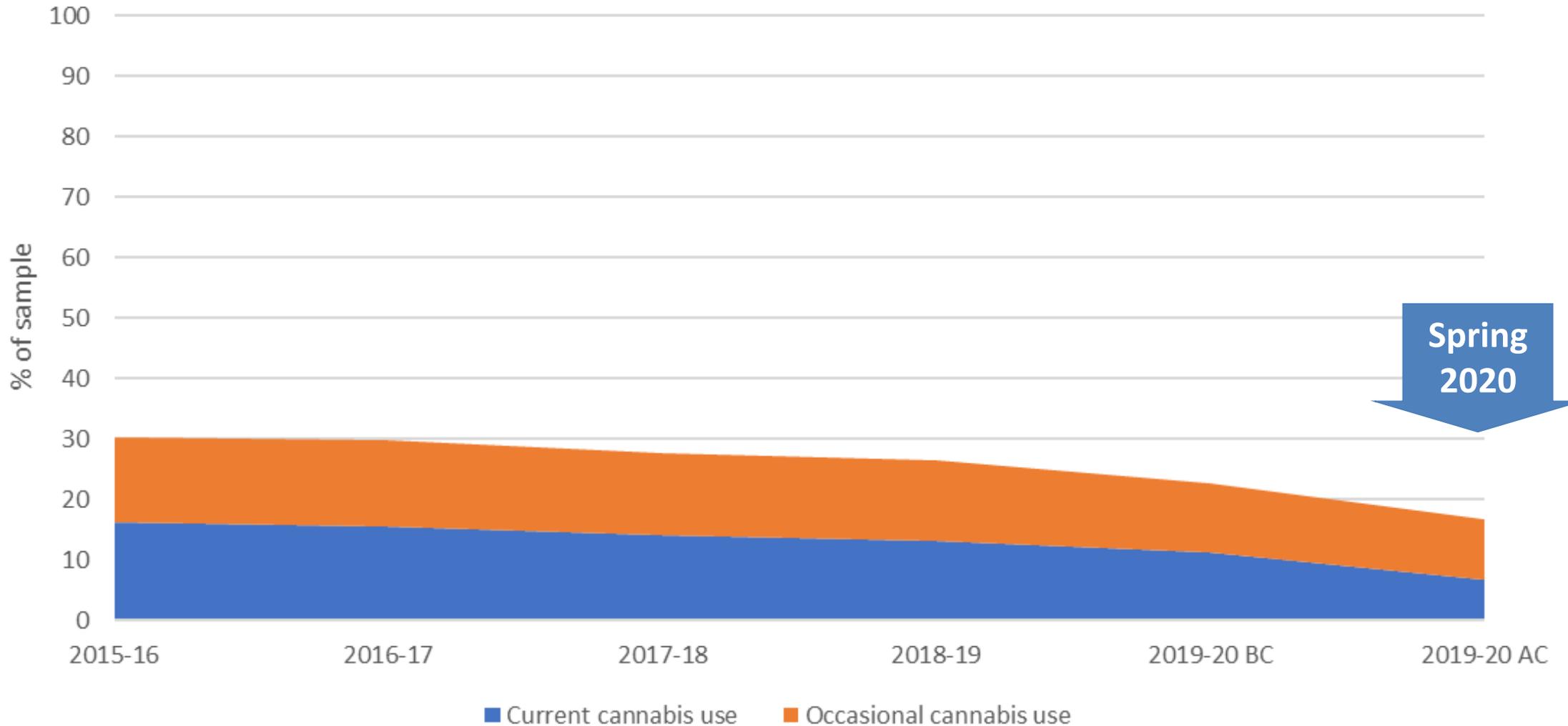
Cigarette smoking frequency among students participating in the COMPASS study from 2015-16 to 2019-20



Cannabis use frequency among students participating in the COMPASS study from 2015-16 to 2019-20



Cannabis use frequency among students participating in the COMPASS study from 2015-16 to 2019-20



Ontario Data Presented Here

(Cross-sectional)

Wave:

2018-19
School Year

Students:

30,675

Schools:

61

Curriculum Mode:

N

In-Person

30675

Alternating

0

Online

0

%

In Person

100%

Alternating

0%

Online

0%

2019-20
Pre COVID-19
(Nov-Feb)

8968

18

8968

0

0

100%

0%

0%

2019-20
Early COVID-19
(May-Jun)

3105

20

0

0

3105

0%

0%

100%

2020-21
Fall COVID-19
(Dec)

2334

6

963

1179

192

41%

51%

8%

2020-21
Spring COVID-19
(Feb-Apr)

4302

19

3606

92

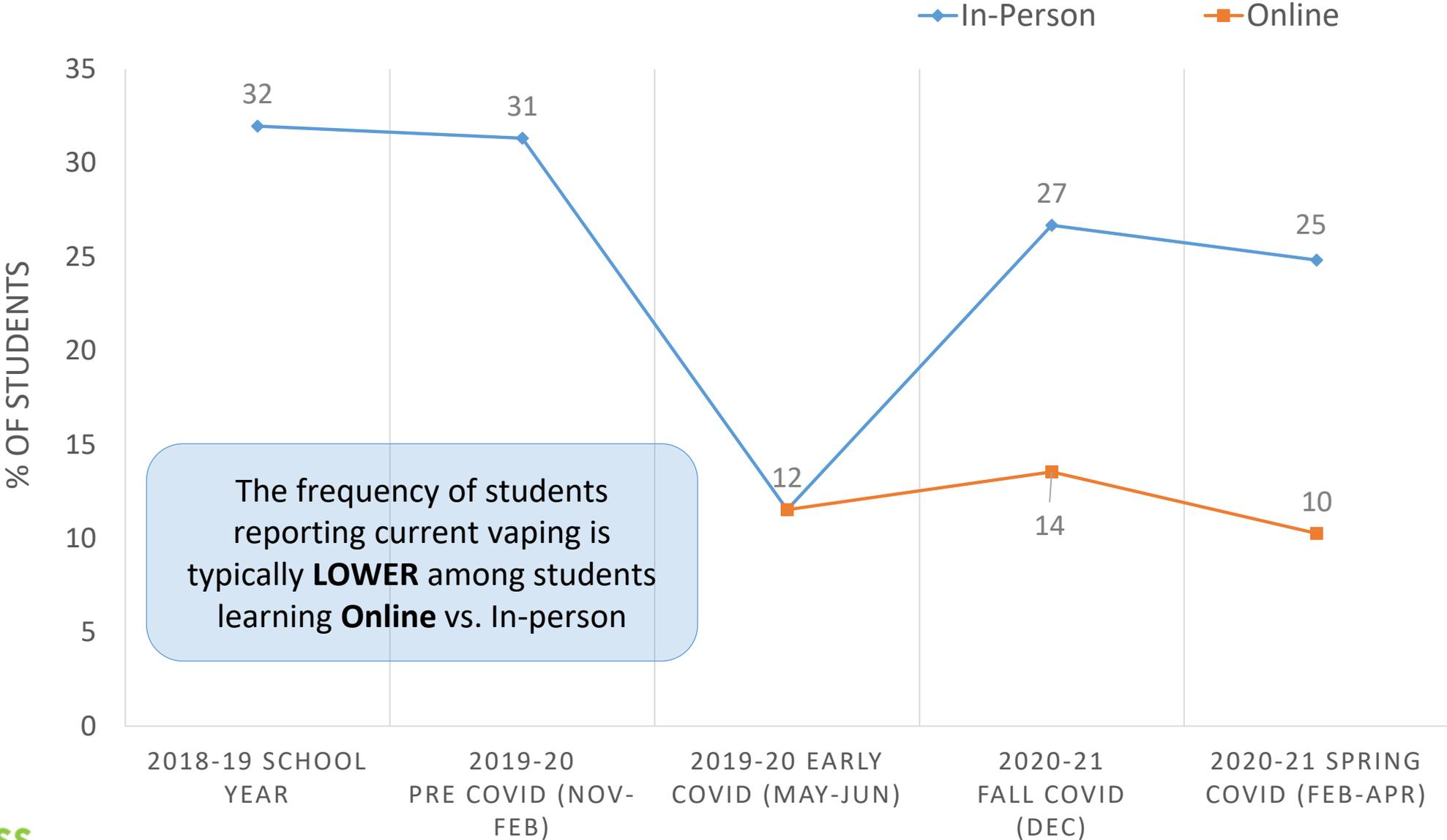
604

84%

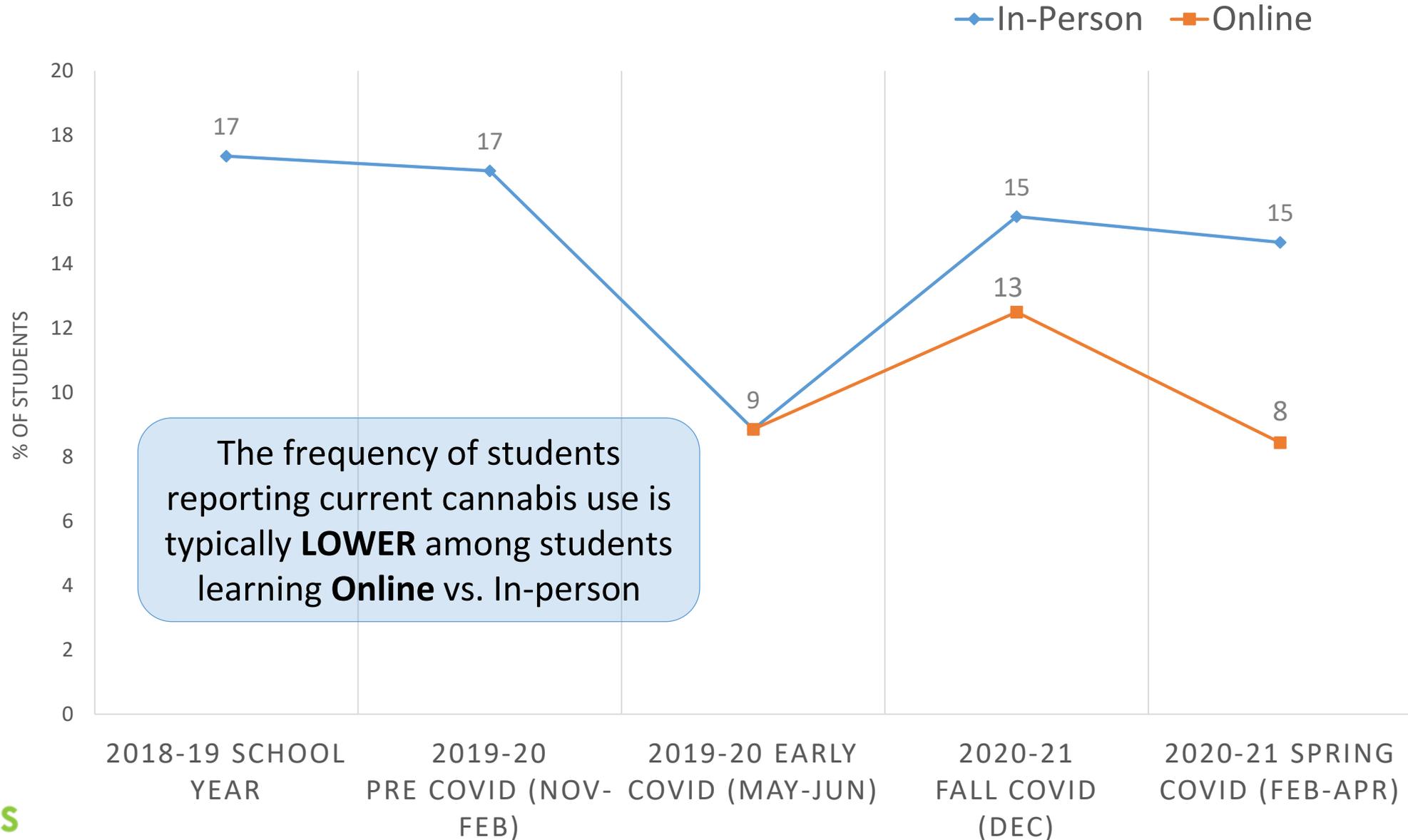
2%

14%

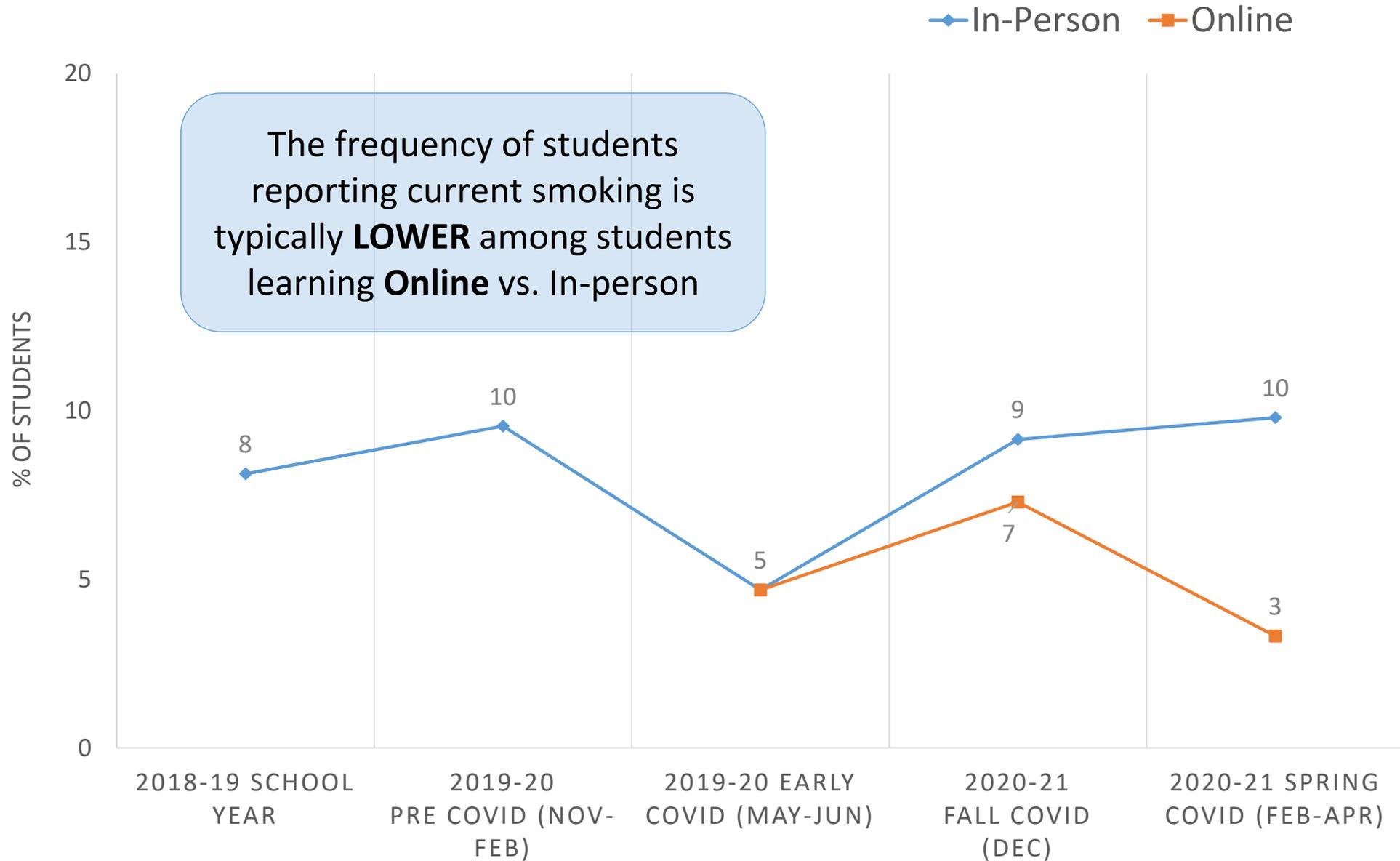
% of students who report current e-cigarette/vaping use by Learning Modality



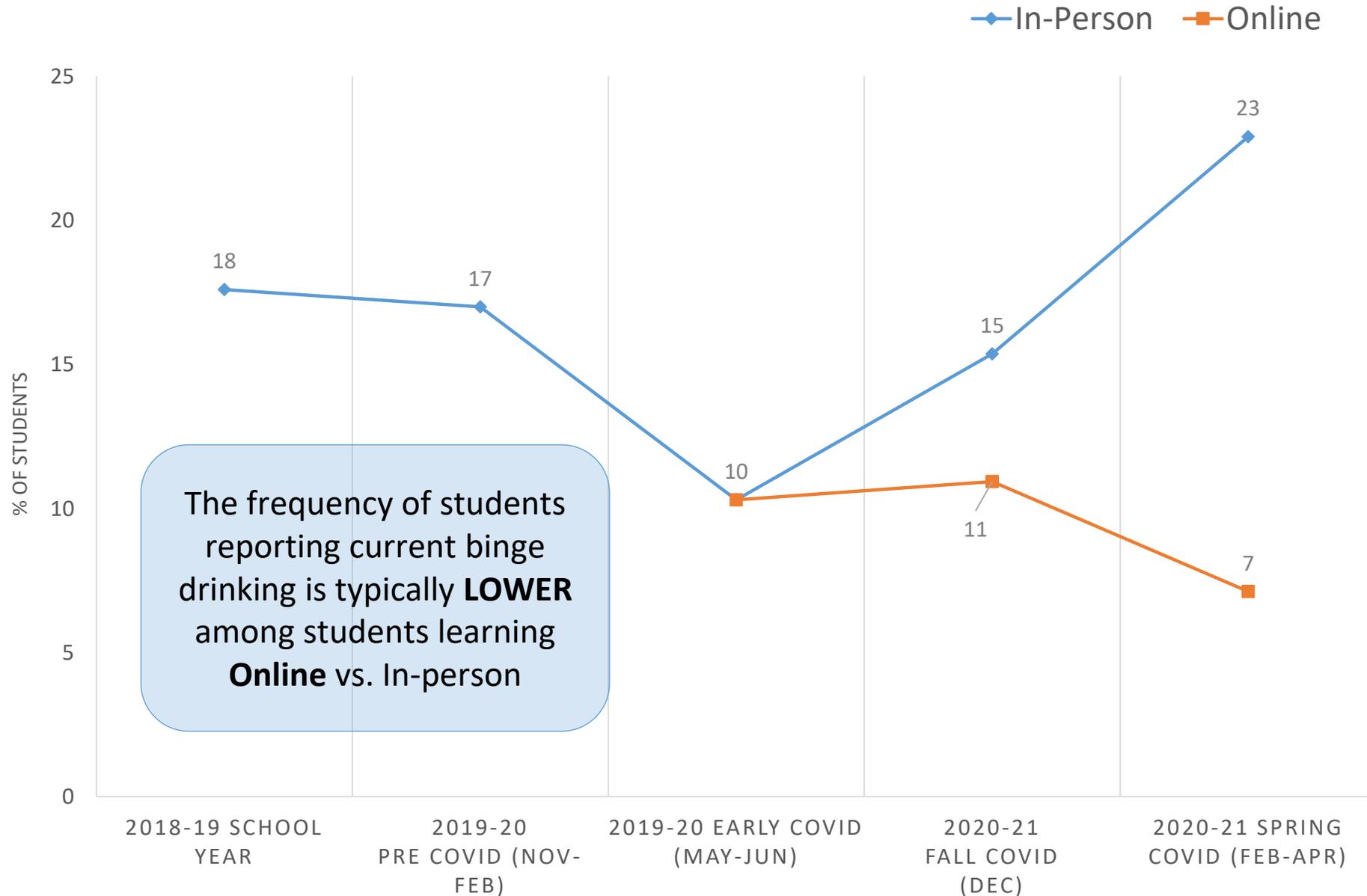
% of students who report current cannabis use by Learning Modality



% of students who report current cigarette smoking by Learning Modality

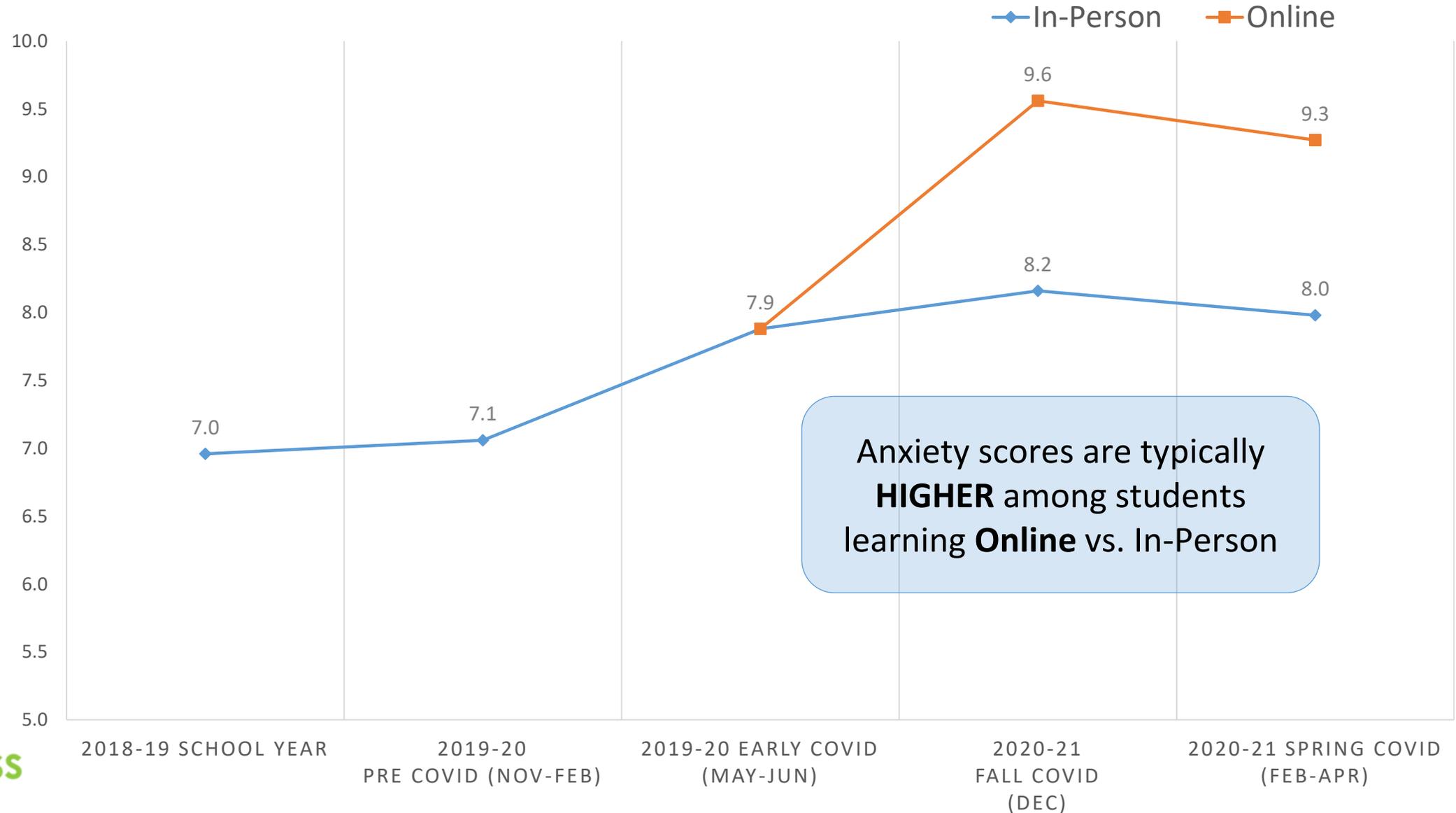


% of students who report current binge drinking by Learning Modality



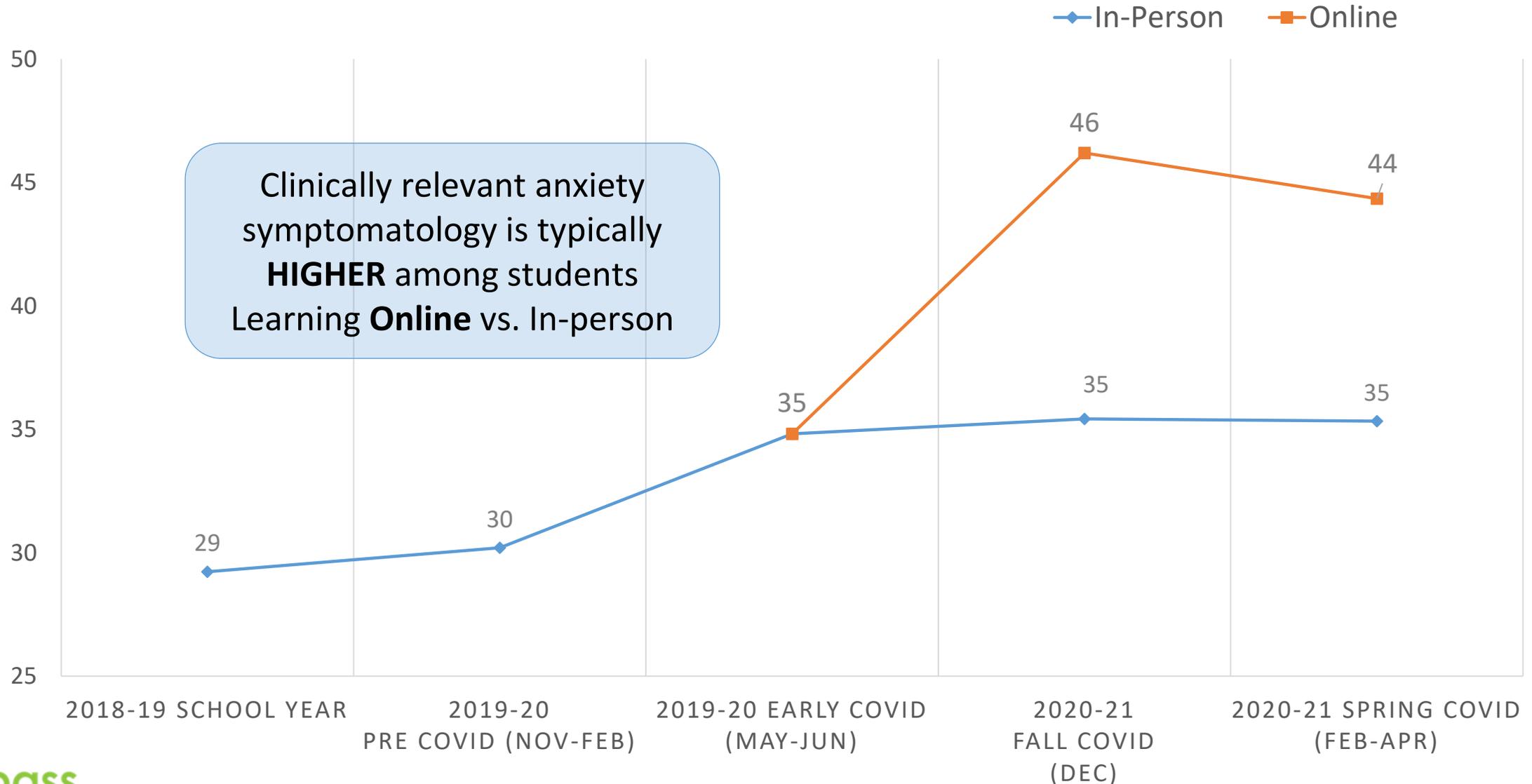
Average Anxiety Symptoms by Learning Modality

GAD-7 Scale: Range: 0-23; Higher scores = Higher anxiety symptoms;
Scores ≥ 10 indicative of clinically relevant symptoms



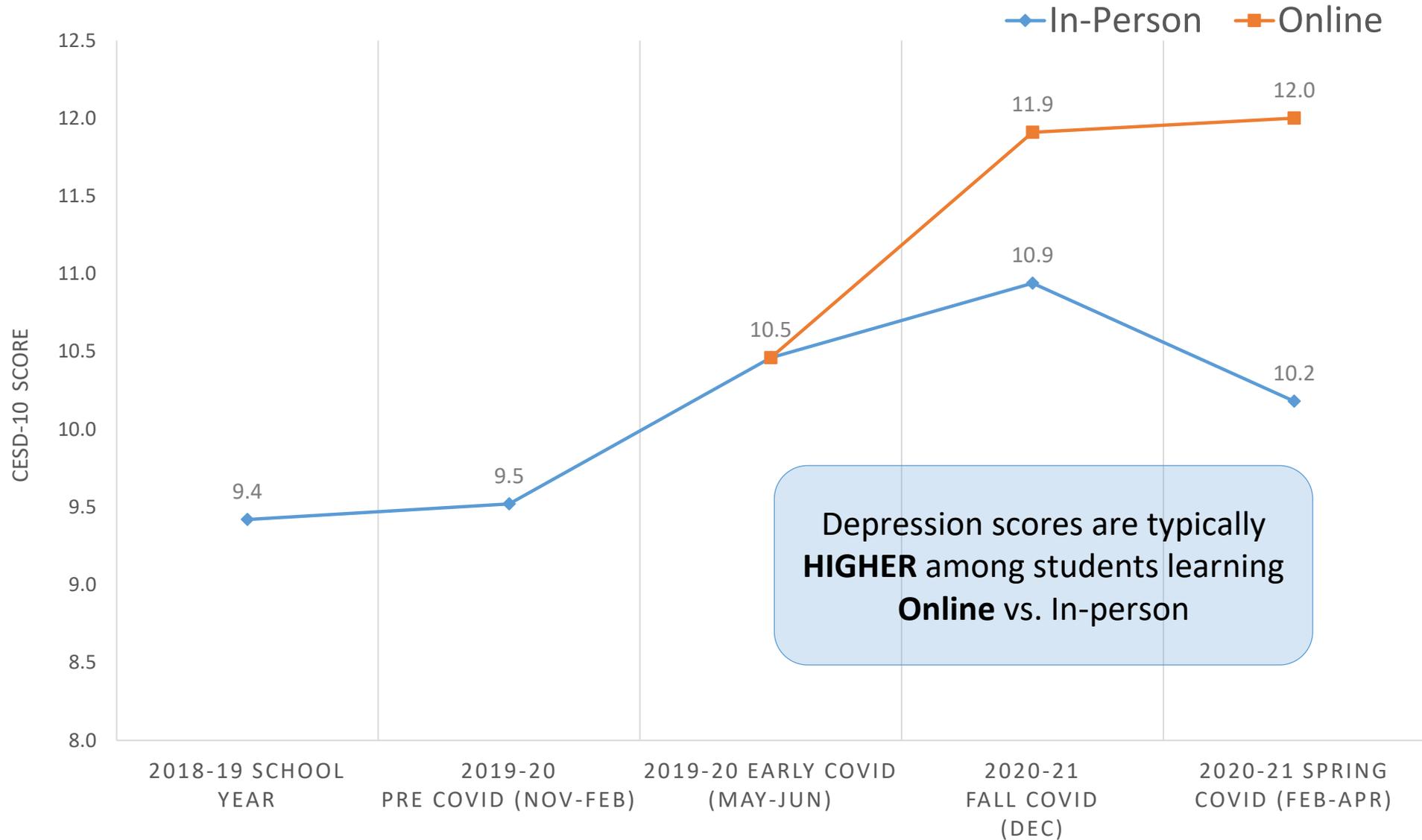
% of Students with Clinically Relevant Anxiety Symptoms by Learning Modality

GAD-7 Scale: Scores ≥ 10



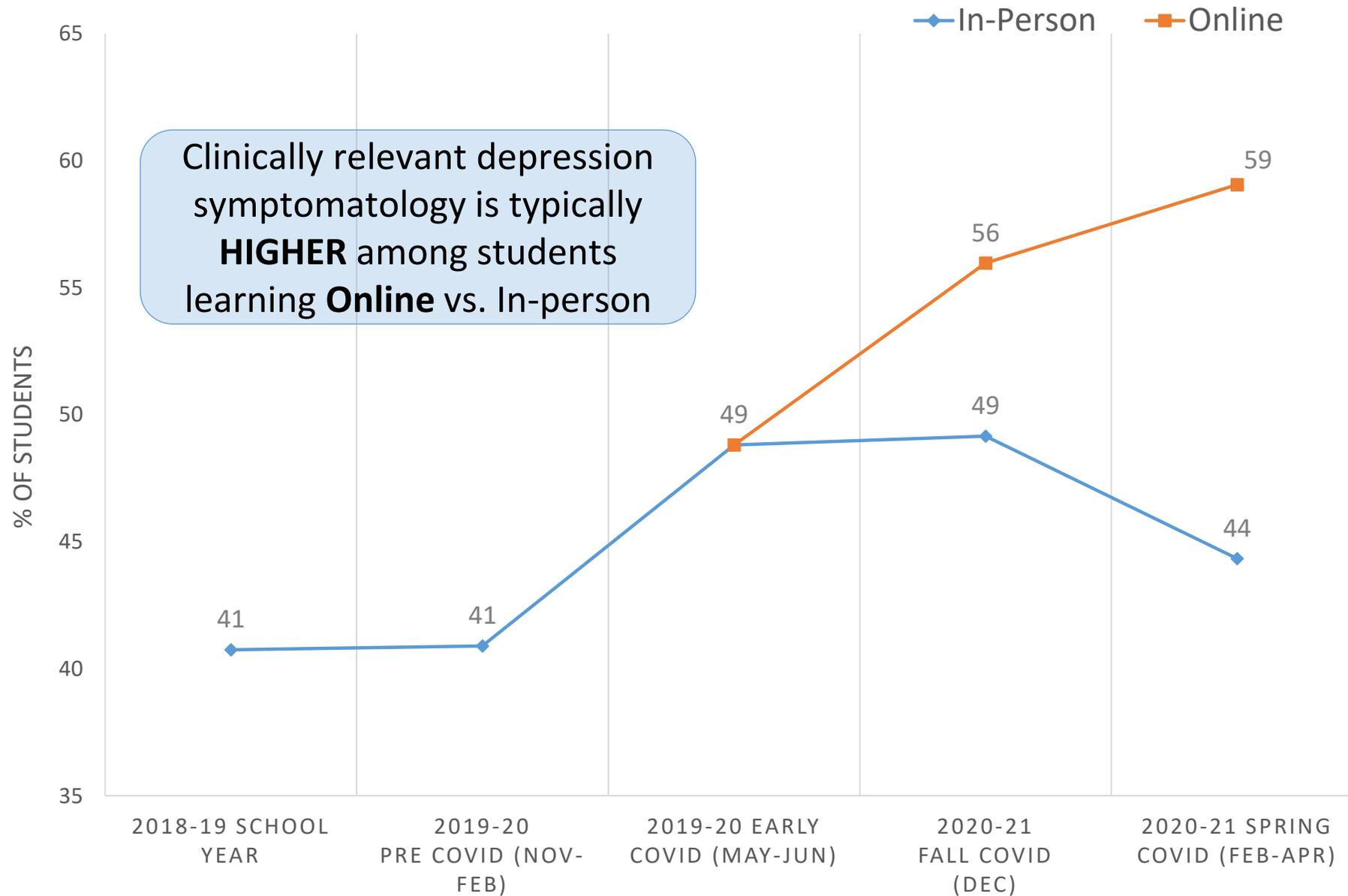
Average Depression Symptoms by Learning Modality

CESD-10 Scale: Range: 0-30; Higher scores = Higher depressive symptoms;
Scores ≥ 10 indicative of clinically relevant symptoms



% of Students with Clinically Relevant Depression Symptoms by Learning Modality

CESD-10 Scale: Scores ≥ 10





Thank you!

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Health
Canada

Santé
Canada

