

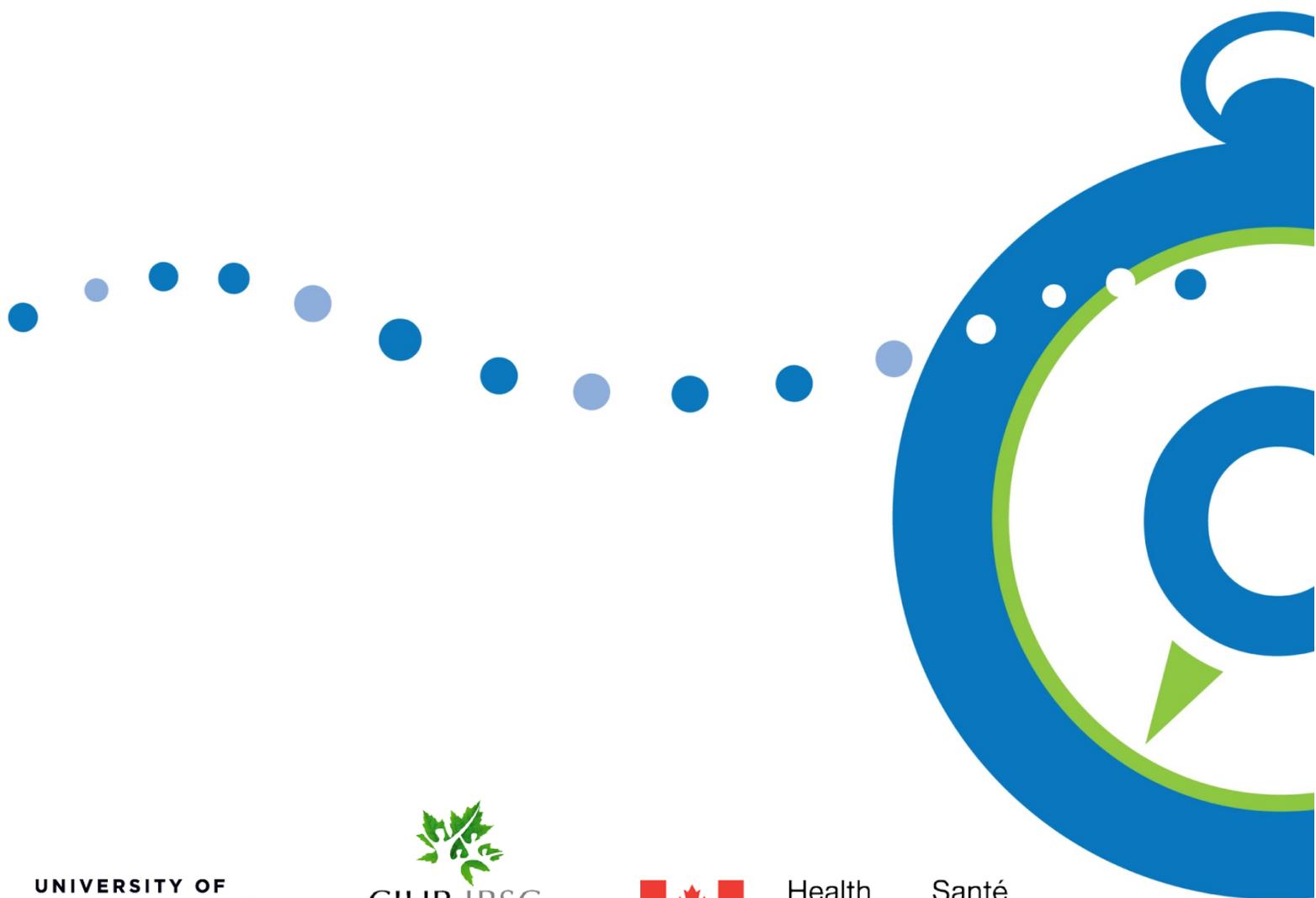


*Cohort study evaluating how changes in school programs, policies, and resources impact youth health behaviours*

## COMPASS Questionnaire Changes from Year 1 to Year 7

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## Introduction

COMPASS is a 9-year longitudinal study (starting in 2012-13) designed to follow a prospective cohort of grade 9 to 12 students attending a convenience sample of Canadian secondary schools over several years to understand how changes in school environment characteristics (policies, programs, built environment) and provincial, territorial, and national policies are associated with changes in youth health behaviours [1]. COMPASS originated to provide school stakeholders with the evidence to guide and evaluate school-based interventions related to obesity, healthy eating, tobacco use, alcohol and cannabis use, physical activity, sedentary behaviour, school connectedness, bullying, and academic achievement. COMPASS has been designed to facilitate multiple large-scale school-based data collections and uses in-class whole-school sampling data collection methods consistent with previous research [2-5]. COMPASS also facilitates knowledge transfer and exchange by annually providing each participating school with a school-specific feedback report that highlights the school-specific prevalence for each outcome, comparisons to provincial/territorial and national norms or guidelines, and provides evidence-based suggestions for school-based interventions (programs and/or policies) designed to address the outcomes covered in the feedback report (refer to: [www.compass.uwaterloo.ca](http://www.compass.uwaterloo.ca)).

COMPASS collects student-level data from participating students using a paper-and-pencil questionnaire (Cq). In response to feedback from participating schools, public health, and researchers, as well as current challenges facing Canadian youth, COMPASS has made changes to the questionnaire as well as expanded its topic areas over the course of the study. This technical report will highlight the changes made to the Cq from Year 1 (Y1: 2012-2013) to Year 7 (Y7: 2018-2019) along with the rationale for these changes.

## Questionnaire Changes from Year 1 to Year 2

Before Year 2 data collections started in 2013-14, a modification was made to the response options for one question on the Cq.

Question 44[f] : **In the last 30 days, did you use any of the following?** (*Mark all that apply*)

- Pipe tobacco
- Cigarillos or little cigars (plain or flavoured)
- Cigars (not including cigarillos or little cigars, plain or flavoured)
- Roll-your-own cigarettes (tobacco only)
- Loose tobacco mixed with marijuana
- Bidis (little flavoured cigarettes that are hand-rolled in leaves and tied at the ends with string)
- Smokeless tobacco (chewing tobacco, pinch, snuff, or snus)
- Nicotine patches, nicotine gum, nicotine lozenges, or nicotine inhalers
- Hookah (water-pipe) to smoke tobacco
- Hookah (water-pipe) to smoke herbal sheesha/shisha
- Blunt wraps (a sheet or tube made of tobacco used to roll cigarette tobacco)
- I have not used any of these things in the last 30 days

The sixth response option, “Bidis (little flavoured cigarettes that are hand-rolled in leaves and tied at the ends with string)”, was replaced with the response option, “e-cigarettes (electronic cigarettes that look like cigarettes/cigars, but produce vapour instead of smoke)”. The bidis response option was originally

included on the questionnaire to remain consistent with Health Canada's tobacco measures. However, less than 1% of students reported using bidis in the first year of the study and the use of e-cigarettes was on the rise and presented a potential public health concern for youth. As such, the bidis option was removed and the e-cigarette response option was added in its place. While this meant that the measure was no longer entirely consistent with the Health Canada version, the importance of tracking e-cigarettes was too overwhelming to ignore any longer.

## Questionnaire Changes from Year 2 to Year 4

There were no changes to the Cq between Year 2 and Year 3. Between Year 3 (2013-2014) and Year 4 (2015- 2016) of COMPASS, the Cq was updated once, which occurred before Year 4 data collections started in 2015. This update consisted of few changes, all of which pertained to the tobacco-use questions.

### Questions Removed

A total of three questions were removed during the update for Year 4. The first question pertained to ease of access to cigarettes while the last two questions pertained to cigarette use, differentiating between regular and occasional cigarette use:

**Question 36 : Do you think it would be difficult or easy for you to get cigarettes if you wanted to smoke?**

- Difficult
- Easy
- I do not know

**Question 37 : Have you ever smoked a whole cigarette?**

- Yes
- No

**Question 39 : Have you ever smoked every day for at least 7 days in a row?**

- Yes
- No

The first question regarding ease of access to cigarettes (question 36) was removed from the questionnaire because there was no variability in responses from students over time, and most students responded that it was easy to access cigarettes. The last two questions (questions 37 and 39) were removed from the questionnaire because analyses ascertained that they added limited research value. That is, COMPASS analyses showed that students experimented with smoking cigarettes but that this experimentation was not indicative of consistent smoking. Removing these questions allowed for additional space to be used for other, more useful, questions.

### Questions Added

Three questions were added to the smoking section in the updated Year 4 version of the Cq. These newly added questions expanded the measure of electronic cigarette use (also referred to as e-cigarettes or vapes). In these questions, students are asked if they have tried an e-cigarette, why they have used e-cigarettes, and the frequency of their use. The questions added in Year 4 are as follows:

Question 41 : **Have you ever tried an electronic cigarette, also known as an e-cigarette?**

- Yes
- No

Question 42 : **Have you used e-cigarettes for any of the following reasons? (Mark all that apply)**

- I have not used e-cigarettes
- Curiosity / to try something new
- I can use e-cigarettes in places where smoking is not allowed
- To smoke fewer cigarettes
- To help me quit smoking cigarettes
- I have used e-cigarettes for some other reason

Question 44 : **On how many of the last 30 days did you use an e-cigarette?**

- None
- 1 day
- 2 to 3 days
- 4 to 5 days
- 6 to 10 days
- 11 to 20 days
- 21 to 29 days
- 30 days (every day)

As previously mentioned, COMPASS was initially consistent with Health Canada’s tobacco measures when creating the Cq. Therefore, the original measures used in the survey did not include e-cigarettes. It was clear, however, that e-cigarettes had become a significant public health concern due to increased awareness and use. For this reason, it was decided to add more detailed questions to the Cq pertaining to e-cigarette use. The wording of the first question (question 41) was specifically chosen to reflect not only current e-cigarette use, but to account for experimentation as well. Question 42 was added to the Cq to learn whether e-cigarettes were used as a replacement for or in addition to tobacco use, which was especially relevant given the debate around the perceived value of e-cigarettes as cessation tools versus the concern that they could potentially be a gateway to traditional tobacco use. Lastly, question 44 was added to this section to understand frequency of e-cigarette use among youth.

## Questionnaire Changes from Year 4 to Year 7

There were no changes to the Cq between Year 4 and Year 5. The Cq was next updated before the start of Year 6 (2017-2018) and then remained unchanged for Year 7 (2018-19). The updates leading up to Y6 consisted of many more changes than the initial updates and the changes were made to multiple topic areas included in the questionnaire. In addition to alterations to existing questions within the original topic framework, a new set of measures was added for a new topic area—mental health—which was to be the most significant change to the Cq that year.

### Questions Removed

#### Physical Activity

In the Year 6 ‘Physical Activity’ topic area, two questions were removed from the questionnaire. These questions both pertained to parent involvement in physical activity; differentiating between parental encouragement and parental support.

Question 22: **How much do your parents, step-parents, or guardians encourage you to be physically active?**

- Strongly encourage
- Encourage
- Do not encourage or discourage
- Discourage
- Strongly discourage

Question 23: **How much do your parents, step-parents, or guardians support you in being physically active?** (*e.g., driving you to team games, buying you sporting equipment*)

- Very supportive
- Supportive
- Unsupportive
- Very unsupportive

These questions were removed because there was limited variability in the responses among students, with the vast majority of students indicating that parents were both encouraging and supportive, and the data from these questions were not being used by researchers. The COMPASS team felt that the space could be better utilized for other material.

#### Tobacco Use: “Your Experience with Smoking”

With respect to tobacco use, two questions were removed when the Year 6 Cq was updated. These questions asked students their age upon first smoking cigarettes and the average quantity of cigarettes smoked each day over the last 30 days.

Question 32: **How old were you when you first tried smoking cigarettes, even just a few puffs?**

- I have never done this
- I do not know
- 8 years or younger
- 9 years
- 10 years
- 11 years
- 12 years
- 13 years
- 14 years
- 15 years
- 16 years
- 17 years
- 18 years or older

Question 38: **Thinking back over the last 30 days, on the days that you smoked, how many cigarettes did you usually smoke each day?**

- None
- A few puffs to one whole cigarette
- 2 To 3 cigarettes
- 4 to 5 cigarettes
- 6 to 10 cigarettes
- 11 to 20 cigarettes
- 21 to 29 cigarettes
- 30 or more cigarettes

These questions were removed because the prevalence of cigarette smoking was very low and most students responded that they had never smoked. The COMPASS team felt that this space would be better used for other measures.

#### Academics: “Your School and You”

The last question removed during the update in Year 6 was in relation to the students’ math level:

Question 58: **What academic level was your current or most recent Math course?**

- Applied
- Academic
- Other

This question was removed from the Cq because the response options for this question were no longer accurate due to Math levels being inconsistent across provinces. The Math levels were based on classifications used in Ontario, which was fine as long as COMPASS was an Ontario-specific study; once COMPASS expanded to four additional jurisdictions (Alberta, British Columbia, Quebec, and Nunavut) the response options no longer reflected the in-school reality for a large portion of COMPASS schools. Further to this, the question—in general—was found to be poorly understood and completed and thus the data that were being gathered from this measure were not of particular use (and were subsequently not being used by researchers).

#### Questions Added

##### Student Demographics: “About You”

Two updates were made to the ‘About You’ section of the Cq to create more inclusive and specific options for the participants. The first updated question was about the participant’s current school grade. Quebec-specific grades were added to the response options for this question. Before expanding to Quebec, the earlier version of the Cq asked students what grade they are in with response options: grade 9, 10, 11, and 12. In this update, we added response options for Quebec students in a box to the right of the current options. These options were specific to the Quebec grade system, ranging from secondary I to secondary V, and including an additional “Other” option (to better account for the more frequent use of alternative classes in Quebec). The second updated question expanded the age range within the survey; originally the range was from 13 years or younger to 18 years or older, with the new range being 12 years and younger to 19 years or older. Again, this was done to accommodate differences in Quebec (i.e., Quebec having five grades in high school instead of four) and to better align

with e-cigarette and alcohol regulation, as the legal age to use these products is 19 years in many provinces across Canada.

Question 1: **What grade are you in?** (*Quebec Students only*)

- Secondary I
- Secondary II
- Secondary III
- Secondary IV
- Secondary V
- Other

Question 2: **How old are you today?**

- 12 years or younger
- 13 years
- 14 years
- 15 years
- 16 years
- 17 years
- 18 years
- 19 years or older

Additionally, one other question was added to this section to collect data on student participation in online gambling:

Question 13: **In the last 30 days, did you gamble online for money?**

- Yes
- No

### Alcohol and Drug Use

Within the 'Alcohol and Drug Use' section of the questionnaire, three questions were added to the Y6 update. Of these new questions, one asks participants about their consumption methods for marijuana, while the other two pertain to the use of various opioids:

Question 47: **If you have used marijuana or cannabis in the last 12 months, how do you use it?**  
(*Mark all that apply*)

- I have used it by smoking it (e.g., in a joint, a pipe, a bong)
- I have used it by vaping it
- I have used it by eating or drinking (e.g., in brownies, cookies, candies, tea)
- I have not used marijuana or cannabis in the last 12 months

Question 50: **Have you used or tried any of the following medications TO GET HIGH?**

- Oxycodone (oxy, OC, APO, OxyContin® percs, roxies, OxyNEO®)
  - **No**, I have never done this
  - **Yes**, I have done this in the last 12 months
  - **Yes**, I have done this, but NOT in the last 12 months
- Fentanyl (china white, synthetic heroin, china girl)
  - **No**, I have never done this

- **Yes**, I have done this in the last 12 months
- **Yes**, I have done this, but NOT in the last 12 months
- Other prescription pain relievers (codeine, morphine, Tylenol 3)
  - **No**, I have never done this
  - **Yes**, I have done this in the last 12 months
  - **Yes**, I have done this, but NOT in the last 12 months

Question 51: **Do you think it would be difficult or easy to get pain relievers (oxycodone, fentanyl, codeine) if you wanted some?**

- Difficult
- Easy
- I do not know

Question 47 was added to the Cq because marijuana/cannabis use among youth was increasingly becoming a public health concern, especially given the Government of Canada’s plan to legalize the recreational use of cannabis. As such, the COMPASS team felt it was important to have additional information on how students were using/consuming it. Questions 50 and 51 were added so as to better align the COMPASS drug questions with those used by Health Canada in other surveys and thus fill some of their research gaps. Having longitudinal opioid data was of particular interest to Health Canada, especially given the growing opioid crisis in Canada [6].

### Mental Health

Another large addition to the Year 6 Cq was the inclusion of a new section on mental health. This section was added to the survey for multiple reasons: first, by adding the mental health component, COMPASS can be used as a climate survey by participating Ontario schools. Second, mental health was cited as a priority by many participating schools. This added section keeps participating schools interested and/or gives them more data in which they are keenly interested. Lastly, the data collected from this section will help to answer additional research questions around topics of current public health concern. For more information on the questions used in the mental health section, please reference the technical report *“Development of a mental health module for the COMPASS system: Improving youth mental health trajectories”* Part 1 and Part 2 [7,8].

### Discussion

Between Year 1 and Year 7 of the COMPASS study, substantial changes were made to the Cq. The primary reasons for these changes were to address emerging public health issues and to align with researcher interests and the interests of participating schools. Overall, the Cq has been lengthened since the start of COMPASS from 12 pages to 16 pages. As a result, we have asked schools to allocate more time for students to complete the questionnaire, increasing the time allocated from 30 to 40 minutes. Even with this increased time allotment, an analysis of survey completion rates found a modest decrease in the number of students completing the final page of the survey: Prior to the inclusion of mental health questions in 2017-18, the average non-response rate for questions on the last page of the questionnaire was 2.9%. After the inclusion of extra pages to accommodate the new mental health measures in 2017-18, the average non-response rate for questions on the last page of the questionnaire was 4.9%. During this same period, non-response to questions on the first page of the questionnaire remained stable, averaging 0.9% before the inclusion of the additional questions and 0.8% after

inclusion. This suggests that either fewer students are able to complete the final Cq questions in the time allotted or that students experience survey fatigue towards the end of the questionnaire. Regardless, completion rates, in general, remain high.

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