



THE ASSOCIATION OF FACULTIES
OF MEDICINE OF CANADA

L'ASSOCIATION DES FACULTÉS
DE MÉDECINE DU CANADA

**2017 AFMC Graduation Questionnaire
Methodological Notes**

September 2017

This document presents information regarding the methodology behind the development, administration, and analysis of the 2017 AFMC Graduation Questionnaire (AFMC GQ), including key aspects of data quality. It provides users with an understanding of the strengths and limitations of AFMC GQ data, and how the data can be used. For ease of reference, methodological notes have been organized into the following sections:

1. Background: History of the Graduation Questionnaire
2. Questionnaire Development
3. Eligible Participants
4. Questionnaire Administration
5. Response Rates
6. Data Capture, Processing and Analysis
7. Use of Results

1. Background: History of the Graduation Questionnaire

Prior to 2015, the Graduation Questionnaire (GQ) was administered as the Canadian Graduation Questionnaire (CGQ) by the Association of American Medical Colleges (AAMC). The CGQ was developed in 2001 as a tool for Canadian faculties of medicine to engage medical students in the evaluation of their medical education and well-being. The AAMC CGQ was English-only from 2001 to 2008, and bilingual from 2009 to 2014. The AAMC and AFMC worked in collaboration to facilitate the transfer of this important questionnaire for 2015, the inaugural year of the AFMC GQ.

2. Questionnaire Development

The AFMC GQ is the result of the collaborative effort of medical educators, representatives from Canadian faculties of medicine, members of the Committee on Accreditation of Canadian Medical Schools secretariat, students, residents, and AFMC staff. Together, these groups worked closely to create the 2017 questionnaire. Based on feedback received about the 2015 and 2016 editions of the AFMC GQ, the questionnaire was modified to better meet the needs of the Canadian medical education community.

Additionally, the AFMC received assistance from faculty and representatives from Québec in order to improve the French translation of the questionnaire.

3. Eligible Participants

The target population for the 2017 AFMC GQ was the 2,845 students who were registered in active studies and, as of January 2017, eligible for graduation from their MD program at a Canadian faculty of medicine. Faculties provided the AFMC with student counts. The national student total was calculated by summing the number of eligible students at all 17 Canadian faculties of medicine. Eligibility was not independently verified. The AFMC relied on the 17 faculties of medicine for the accuracy of the information they provided.

4. Questionnaire Administration

The 2017 AFMC GQ was programmed and accessible for student completion in both English and French using FluidSurveys, an online survey platform. Prior to the launch of the questionnaire, testing was conducted by AFMC to assess the functionality of the survey software.

The AFMC received a count of eligible students from each faculty of medicine. Ten faculties were able to provide the university email addresses of all eligible students; the AFMC contacted these students directly for participation in the GQ. Six faculties were unable to share student contact information with the AFMC. These faculties contacted their students via email using communication materials provided by the AFMC in order to invite them to complete an online registration form. This form collected a student's name and email address, and served as a consent form to allow the AFMC to contact students who submitted this information. The AFMC then contacted these students for participation in the GQ. One faculty provided the email addresses of a subset of students who had consented to release this information to an external organization; the AFMC contacted those particular students directly, while the remaining students went through the online registration form.

The 2017 AFMC GQ was available to access online between February 6, 2017 and May 31, 2017. Launch dates varied by school to best coincide with their respective academic schedules.

Students were sent an invitation to participate in the GQ via email, using FluidSurvey's "Invites" feature. The email invitation provided students with a unique, private URL to gain access to the online survey. This customized URL was automatically generated by the online survey platform. Neither the AFMC nor the schools are able to link a student to their URL. In this way, participants were ensured anonymity. To further safeguard respondent anonymity, the survey was set to "anonymous". Some of the features of this FluidSurveys setting include: invite codes/URLs that were used to access the questionnaire remain hidden (i.e., are not included in the resulting dataset), respondent email addresses remain hidden, and IP addresses are not logged.

Upon accessing the URL, students were directed to a page providing more information about the GQ and prompting them for their voluntary informed consent. Students who gave consent to participate were presented with the questionnaire. All questions in the 2017 AFMC GQ were voluntary, with the exception of the questions confirming faculty and, where applicable, campus enrolment. Students were able to view their progress via a progress bar that indicated the percentage of completion, and responses were automatically saved, allowing students to return to complete the questionnaire at another time (students could also opt to manually save their progress). Students were able to complete the questionnaire in either English or French.

Students received a total of up to three reminders to complete the GQ from the AFMC. FluidSurveys' functionality allowed only those students who had not yet submitted the GQ to receive these reminders, while keeping the identity of the recipients hidden from the AFMC. Students who were required to register their email addresses first received additional reminders from a designated university representative at their school, reminding them to complete the online registration form.

Students who either did not receive or lost their invitation were asked to contact gq@afmc.ca using the email address that the AFMC would have on file. All enquiries remained strictly confidential. Once notified of the missing invitation, an AFMC representative used the FluidSurveys invitation platform to re-send the original invitation.

5. Response Rates

Designated contacts at each faculty received biweekly updates from AFMC on the proportion of eligible students who had submitted questionnaires. Where students had to register their email addresses, designated contacts also received updates on the proportion of students registered.

The response rate for the 2017 AFMC GQ is calculated based on completed questionnaires. A questionnaire was considered "complete" only if all of the following criteria were met:

- a. Respondent indicated consent to participate in the GQ; and
- b. Respondent clicked the "submit" button at the end of the questionnaire.

The following table presents how many questionnaires were accessed and demonstrates how the criteria above were applied to determine the total number of completed questionnaires retained for analysis.

Questionnaires accessed	2,003
a. Respondents indicating consent to participate	1,997
b. a) above and respondents clicked "submit"	1,919
Total completed questionnaires	1,919

The resulting number of completed questionnaires was divided by the total number of eligible graduating students to determine the national response rate.

Total completed questionnaires	1,919
Total eligible students	2,845
National response rate (2017 AFMC GQ)	67.5%

Each unique URL could only be used to complete the questionnaire once; that is, once a questionnaire had been submitted using a specific URL, that link no longer allowed access to the questionnaire. With the exception of one student, who was assigned a second URL due to initially registering with an invalid email address (the first URL was sent to the mistyped email address but not successfully delivered), no student received more than one unique URL.

The refusal rate for the 2017 AFMC GQ was 0.2%. This is calculated as the number of respondents who accessed the GQ but replied “no” when asked to provide consent to participate, divided by the total number of students eligible to complete the GQ.

6. Data Capture, Processing and Analysis

Responses were captured by FluidSurveys software, which allows for responses to both the English and French versions of the GQ to be combined (i.e., appear together in the same dataset).

FluidSurveys software possesses skip logic functionality, including advanced question branching. This allows a respondent to be directed to a follow-up question based on their previous response selected. This reduces respondent burden since respondents to whom a follow-up question does not apply are not shown it. For the 2017 AFMC GQ, branching was employed for several questions; however, the FluidSurveys software has the technical ability to save responses that are not consistent with the branching rules (and therefore illogical), as responses are captured in real time. For example, a respondent could enter a response of “Yes,” progress to the next question (dependent on that “Yes” response), but then move back in the questionnaire and change their previous response to “No.” If they had already entered a response to the follow-up question, that would still be captured by FluidSurveys (the respondent would not be presented with the follow-up question on the second pass through, and would therefore be unable to change their response). As a result of this possibility, a data cleaning principle was put in place to favour responses to the prerequisite question (in the example given, the yes/no question) over the follow-up question. In order to enforce this, filters were put in place during data analysis to ensure that responses to follow-up questions were not considered for analysis when not logically consistent with responses to the relevant prerequisite question.

To protect against data entry errors,¹ FluidSurveys allows for response parameters to be set that cannot be violated (to use numerical data as an example, a minimum and maximum value can be specified to avoid out-of-range values such as 255 for age). Such parameters were in place for the question about the amount of debt directly related to medical education; however, these parameters were intentionally broad (e.g., minimum value >0 for debt) to accommodate the unknown distribution of responses. In previous years, responses that were deemed extreme outliers were excluded from the analysis. In 2017, all responses for the amount of debt related to medical education fell within reasonable limits and no data were excluded from the final analysis.

The final question of the survey is an open-ended question seeking general feedback about the questionnaire itself; these comments are not reported publicly and are for internal use by the AFMC.

Frequency distributions (counts and percentages) are presented for all questions from the 2017 AFMC GQ. Please refer to the notes accompanying each data table for more information. Percentages presented may not add to 100 due to rounding or due to response formats that permitted more than one response per question. For some questions, measures of central tendency (mean/median) and dispersion (standard deviation/range) are reported. Because all questions (other than faculty or campus enrolment) in the 2017 AFMC GQ were voluntary, there are instances where respondents skipped (i.e., did not answer) a question. Some questions also had response options such as “not applicable” or “prefer not to say.” These cases were excluded from calculations of total counts, percentages, or measures of central tendency and dispersion for a given question. In the case of “not applicable” or “prefer not to say/provide” responses, an additional table is provided with the count of respondents who chose such options and the count of those who did not answer the question. Where these options were not available to respondents, the number who skipped the question can be obtained by subtracting the total count of responses from the 1,919 completed questionnaires.

The faculty and campus enrolment of respondents was gathered in two different ways. As previously described, the survey asked respondents to confirm their faculty and campus (if applicable). However, FluidSurveys also grouped responses by campus through a feature called “Collectors”. Because of this, there were occasional inconsistencies between the student’s self-reported campus of attendance and the campus indicated by the collector. In these cases, we relied on the student’s self-reported campus rather than the FluidSurveys Collector.

To uphold rigorous standards of participant anonymity and the confidentiality of responses, only aggregate data are reported by the AFMC. The AFMC produces a publicly available national report, combining data from all schools. Each faculty is also provided with their individual data that presents aggregate responses at the faculty and, if applicable, campus levels. No data is issued to the faculty if there are fewer than ten (10) respondents for a reporting level (e.g., if a

¹ Data entry errors in the context of the 2017 AFMC GQ are defined as respondent errors (e.g., typos), since the GQ is a self-administered questionnaire.

campus has fewer than 10 respondents). Faculty- and campus-level data are not publicly disseminated by the AFMC.

Responses to questions about finances or research experience could, on their own, reveal information about the identity of a respondent. For this reason, no results are reported at the national level when fewer than five (5) respondents selected a particular response option for these questions.

Individual-level data (microdata) will not be made publicly available by the AFMC.

7. Use of Results

As mentioned in Section 3, the 2017 AFMC GQ surveyed students eligible to graduate from an MD program in a Canadian faculty of medicine as of January 2017. Subsequent graduation was not verified by the AFMC, who relies on member schools to provide eligible student information. It is important to qualify that the AFMC GQ data reflect the responses of respondents who are eligible to graduate but may or may not be actual graduates.

The results obtained by the AFMC GQ are not based on a random sample and respondents were self-selecting. For this reason, the results presented in this report are representative only of the students who responded to the 2017 AFMC GQ and should not be used to make inferences about the entire student population. Extreme caution must be applied when performing comparisons or drawing conclusions based on this non-random sample. As noted in Section 6, when appropriate, standard deviations are reported. This statistic is useful to assess the distribution of the answers to a question. The standard deviations in this report are not meant to be used to build confidence intervals or infer statistical significance.

While the AFMC GQ was born from the AAMC CGQ, comparisons to AAMC CGQ results (2014 and earlier) cannot be made due to changes in the content of the questionnaire and method of administration. Comparisons to 2015 and 2016 AFMC GQ results are made where possible; however, several areas of the 2017 questionnaire were modified. The 2017 version of the questionnaire was revised to only include questions that are required by schools to fulfill their accreditation requirements. The changes to the questionnaire can be summarized as follows:

- The addition of questions about student experiences in a Longitudinal Integrated Clerkship (LIC), if applicable;
- The removal of questions about student experiences in an Anesthesia rotation;
- The removal of all questions relating to demographics and career plans;
- The removal of some questions pertaining to enrolment, clinical learning experiences, clinical decision-making and clinical care, general skills, preparedness for residency, school administration, student affairs and student services, mistreatment, and financial information;

- The removal of “Publicly embarrassed” and “Subjected to negative or offensive behaviour(s) not described above” in the question pertaining to experiences of mistreatment; and
- The removal of open-ended text responses where respondents could qualitatively describe the strengths and weaknesses of their various clinical rotations, as well as their experiences with student support services.

Please refer to the following section for more information. Question-specific information can also be found in the “Note” section accompanying most tables in the current and previous editions of the AFMC GQ National Report.

7.1 Additional considerations regarding specific questions within the 2017 AFMC GQ

The following are specific considerations regarding the interpretation or comparability of results for specific questions. Also highlighted are any major changes relative to the 2016 edition of the questionnaire.

- Clinical learning experiences: this suite of questions asks about a student’s experiences in the core clerkship rotations. In the 2017 edition of the questionnaire, “Anesthesia” was removed as one of the clinical disciplines since it is not a mandatory clerkship rotation at a number of Canadian medical schools. In its place, respondents were asked about their learning experiences in a Longitudinal Integrated Clerkship (LIC). In addition, one particular question asks respondents whether or not they were observed while performing a physical exam in each clinical rotation. In the case of Psychiatry, the wording was changed from “Physical examination” to “Mental status examination”.
- Research: The 2016 questionnaire contained a response option of “No, other (please specify)” that provided an opportunity for respondents to qualify their answer in an open-ended text box. In 2017, this response option was modified to simply read “No, other” without a text-response option.
- Mistreatment: the question pertaining to behaviours experienced during medical school was modified such that two reporting options were removed: “Publicly embarrassed” and “Subjected to negative or offensive behaviour(s) not described above”. Reports of being publicly embarrassed had been previously excluded from much of the analysis relating to students’ experiences with mistreatment. It was included in earlier versions of the AAMC CGQ and AFMC GQ as a measure to increase the validity of items related to being publicly humiliated. Consequently, when this response option was removed, there was a notable increase in the reporting of being publicly humiliated on the 2017 AFMC GQ. Although 2016 and 2017 data are both included in this report, it should be noted that these data are **not** directly comparable and the findings should be interpreted with caution.
- Financial information: In 2017, students were not asked about educational debt prior to entering medical school nor were they asked about scholarship and bursary funding. The

2016 question that asked students if they had any obligations for return of service was also removed from the 2017 AFMC GQ. Students were only asked about the amount of debt that they accumulated as a direct result of their medical education.

The national report (a summary report combining the data from all schools) is available to the public on AFMC's website.

The information contained in the 2017 AFMC GQ National Report is presented by the AFMC on behalf of the Canadian faculties of medicine. Please contact the AFMC at gq@afmc.ca prior to use of or quoting any information contained in this report.

Please feel free to contact gq@afmc.ca for more information about this summary or any aspect of the AFMC GQ.