



CFPC's Select Answer Management Problems (SAMP) Writing Guidelines

Purpose of This Document

This SAMP writing guide provides the Family Medicine and Emergency Medicine SAMP committees guiding principles to follow for the content production of the SAMP Certification examinations.

Acknowledgement

The College of Family Physicians of Canada (CFPC) acknowledges using the following two resources to develop its SAMP writing guideline:

- Medical Council of Canada. *Guidelines for the Development of Multiple Choice Questions*. Ottawa, ON: Medical Council of Canada; 2010. Accessed June 10, 2026. <https://mcc.ca/wp-content/uploads/Multiple-choice-question-guidelines.pdf>
- National Board of Examiners. *Constructing Written Test Questions for the Basic and Clinical Sciences*, 6th edition. Philadelphia: National Board of Examiners; 2024. Accessed June 10, 2026. <https://www.nbme.org/educators/item-writing-guide>.

Purpose of the Certification Examination in Family Medicine:*

The Certification Examination in Family Medicine ensures that the required complex knowledge and skills for competent family practice in Canada have been assessed through a nationally administered, rigorous, and standardized process.

*The Purpose of the Certification in Family Medicine is currently in draft and in the process of being sent for consultation.

What is a Select-Answer Management Problem?

The SAMP is a clinical problem/presentation that will test candidates at the skill level of a graduating family medicine resident ready to enter unsupervised practice. An SAMP case is a vignette (also called case stem) followed by a series of questions. A question within an SAMP case may add extra information that needs to be considered in the context of the SAMP vignette to generate the correct answer.

- All questions in each SAMP case will have answer options to choose from:
 - a. Single best answer (SBA): Some questions will have a single correct option among three to four distractors. There will be a total of four or five answers to choose from.
 - b. Menu-style or short-menu format question (multiple correct answers):
 - i. The number of correct answers to be identified will always be clearly indicated in the question (e.g., “Choose three correct answers from the following list”).
 - ii. For each correct answer, there will be at least two distractors provided. (e.g., if two correct answers are requested, there will be at least six options in the list to choose from)
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Developing an SAMP Case

SAMP cases are based on the key features and priority topics set forth in the [Assessment Objectives for Certification of Family Medicine, 2nd Edition](#).

- Each SAMP case will contain two to five questions, leading to a total of five to 10 answers per case.
 - Each right answer is worth one point and each wrong answer is worth 0 points.

The basic steps to follow in the development of your SAMP case are:

1. Using the CFPC Priority Topics and Key Features, select a clinical problem/presentation of relevance to the skill level of a graduating family medicine resident ready to enter unsupervised practice, and think about the key steps that should be taken in resolving the problem. Depending on the selected problem, these steps can relate to taking a history, examining the patient, ordering or interpreting investigations, recognizing a need for urgent action prior to a full work-up, defining the diagnosis, treating, counselling, follow-up, prevention, etc. The question you develop should test an important clinical decision relative to one of these key steps.
2. Develop or select a case that you will present in the stem of the question. It is a good strategy to base the case on a real patient.
3. Write the stem of the question.
4. Formulate the correct answer(s).
5. Develop additional plausible distractors.

The Vignette (Case Stem)

The vignette is a short description of a **clinical scenario based on a CFPC priority topic (PT)** of a common or clinically important patient presentation. The SAMP vignette is based on a priority topic, and questions are developed based on individual key features. For example, if the case is on diabetes (PT), it could have a question on investigating and establishing diagnosis (key feature 1) and a question on treatment (key feature 2), etc.

Each vignette should be concise and ideally be kept under 300 words.

The vignette should be clear and include all the information necessary for the candidate to reason out the clinical problem. The data may include:

- Age, sex (e.g., a 45-year-old male)
- Context of care (e.g., comes to the emergency department)
- Presenting complaint (e.g., because of headache)
- Duration (e.g., that has continued for two days)
- Patient history
- Physical findings
- Results of diagnostic studies (optional)
- Initial treatment, subsequent findings, etc. (optional)

How much data you provide in the case stem is determined by what the question is testing.

Examples of a vignette:

Example 1

You are seeing a 76-year-old female patient in your clinic. She comes to see you for a follow-up of her long-standing hypothyroidism and atrial fibrillation. She has no specific concerns. Her medications include: levothyroxine sodium (Synthroid) 75 mcg per day and apixaban 5 mg BID. She quit smoking five years ago after smoking a pack a day for 30 years. She is otherwise healthy and up to date on all her immunizations and screening tests. She has had no surgeries and has no allergies.

The staff performed a blood pressure measurement when she arrived, and it was 146/90 mm Hg.

Example 2

You are seeing a 40-year-old male patient of yours in a rural emergency room. You diagnosed him with community acquired pneumonia two days earlier. He was started on oral amoxicillin. He now has severe lethargy, muscle cramps, and postural dizziness.

He is known to have hypertension and type 2 diabetes. He is taking ramipril 5 mg OD, hydrochlorothiazide 12.5 mg OD, metformin 500 mg BID, and simvastatin 40 mg OD.

The Questions

Questions are developed to assess the candidate at the Bloom's taxonomy level of Apply or higher. They should not ask a candidate to recall a simple fact.

Questions are developed based on one of the key features of the priority topic chosen for the case. Additional information may be provided preceding the question.

- It is possible to have multiple questions based on the same key feature within a case.
- There won't necessarily be questions on every single key feature.

Each SAMP case may have a mix of single best answer and short-menu format questions.

There will be no cascading from one question to the next. Each question should stand on its own.

The question must be clear, and it should be possible to arrive at an answer without reading the options. To determine if the question is clear and focused, cover up the list of options with your hand – if the question is clear, the good candidate should be able to answer it without reading the options.

The question will start with: "Which one of the following, what is the best/most likely/most important/...?"

- In a single-best answer question, the question will have the format: Which of the following [...] ? Select **ONE**
- In a menu-style question, the number of answers requested would be clearly indicated: Select three of the following...

Questions should be worded positively:

- Do **not** use "All of the following are correct **except**" questions.
- Do **not** use "Which one of the following is **not** ...".

Examples of questions

Single-best answer question:

1. Before examining the patient, you are considering your differential diagnosis. Which one of the following is most likely the cause of his new symptoms?

Select **ONE**.

- a. QT prolongation from the antibiotic
- b. Dehydration
- c. Diabetic keto acidosis
- d. Hypoxia from pneumonia
- e. Hyponatremia

Menu-Style question:

1. His vitals are as follows: BP 105/70 mm Hg, pulse 110/min, regular. O₂ saturation stable at 92% on room air. Resp rate 18/min. He does not appear to be in respiratory distress. He has bilateral scattered crepitations in his lungs. Heart sounds normal. Which of the following tests would you want to order to rule out potential causes for his presentation? Select **THREE**.
 - a. Serum creatinine
 - b. HbA1C
 - c. ECG
 - d. Head CT scan
 - e. Bedside glucose testing
 - f. CXR
 - g. Postural BP measurements
 - h. White cell count
 - i. Arterial blood gas

Single-best answer question:

1. While waiting for results to come back, which one of the following would be the best next step in managing this patient? Select **ONE**.
 - a. Change antibiotics to a different class
 - b. Initiate oxygen by mask at 2L/min
 - c. Start IV fluid replacement therapy
 - d. Start a vasopressor drug
 - e. Start IV insulin titration

Other Important Question Writing Principles

- Refer to drugs using their generic name. If you feel that candidates will be unfamiliar with the generic drug name, the trade name should be inserted in parentheses.
- Canadian English spellings will be used for all words, with the exception of digraphs (e.g., use “hemoglobin”, “pediatrician”, and “anesthesia” instead of “haemoglobin”, “paediatrician”, and “anaesthesia”).
- If needed, the use of acronyms should follow the full spelling of terms; for example, “magnetic resonance imaging (MRI)”.
- Provide a reference for the case that you write. The reference should include the author’s name, title of text, edition, publisher, and page number.
- Images can be incorporated in items as a vehicle for testing important clinical data interpretation skills. Their use is encouraged. They must be digitalized. They must **not** be copyrighted and/or must be accompanied by patient consent if provided from your personal collection.

Possible Answers

For single-best answer questions:

- There are the **four** or **five** options that represent possible answers to the question. One of the options should be the correct answer (the “**key**”). The other distractors may be plausible but not the best choice.
- None of the answers will include either “None of the above” or “All of the above” as an answer option.
- None of the answers will list a combination of answers (e.g., a) and c) are correct).

For menu-style questions:

For each correct answer, there will be approximately three options to choose from.

- If two correct answers are requested, there will be around six options in the list to choose from (two key answers, four distractors).
- If three correct answers are requested, there will be around nine options in the list to choose from (three key answers, six distractors).
- There will be a maximum of five correct answers per question (five key answers, 10 distractors).

Writing correct answers

- The correct answer should be clearly correct and defensibly better than the other options.
- Avoid making the correct answer clearly longer/shorter than the other options.
- Avoid clues to the correct answer such as:
 - Using textbook wording in the correct answer and not in the options.
 - Using specific inclusive or exclusive determiners such as **always**, **never**, or vague terms such as **seldom**, **frequently**, etc.
 - Using words in the correct answer that are also used in the stem.
 - Having no link between the stem and some of the distractors (e.g., stem asks for investigations, distractors include treatments).
 - Lacking parallelism among the options (grammatical, structural, vocabulary, technical jargon).

Writing good distractors

Distractors need to be constructed with great care.

Acceptable distractors:

- Are consistent with the vignette.
- Seem plausible and attractive to the uninformed. The distractors should include content that is reflective of common misconceptions or errors. If the question is a single-best answer, can competent candidates make a case for one or several options? If so, reformulate those options.
- Are incorrect or definitely inferior to the correct answer(s).

- Are homogeneous with each other and with the correct answer. They should fall into the same category as the correct answer (e.g., all diagnoses, tests, treatments, prognoses, or disposition alternatives). Failure to offer distractors that are homogenous may allow a lower performing candidate to deduce the correct answer by analyzing the pattern of distractor inhomogeneity rather than by using medical knowledge.
- Are grammatically consistent, logically compatible, and relatively the same length as the correct answer.
 - All numbers in a range or all numbers presented as single digits.
 - All words/sentences are plural or all are singular.
 - All answers are related to the same concept.
 - All answers are relatively the same length as the correct answer.
- Do not stand out as being obviously incorrect. Common misconceptions and faulty reasoning provide a good source of plausible options, as do the mistakes that are often made by a minimally competent candidate. You should be able to provide the line of reasoning that a candidate would use to select any one of the distractors as an answer. If you are unable to provide the line of reasoning then, more than likely, the distractor is not plausible.
- Do not contain any hint to the correct answer.
- Do not insert humorous options. This can potentially be distracting to candidates.
- Do not overlap in content; for example, (a) 11-20 (b) 15-30 (c) 24.
- Do not use "All of the above" or "None of the above" as options.
- Do not use absolute descriptors, such as All/None, Never/Always, Completely.
- Do not use vague descriptors, such as Rarely/Never, Easiest/Hardest.

Appendix A

Example of MCQ or menu-style questions

Sample multiple choice question - Hypertension

You are seeing a 76-year-old female patient in your clinic. She comes to see you for a follow-up of her long-standing hypothyroidism and atrial fibrillation. She has no specific concerns. Her medications include: levothyroxine sodium (Synthroid) 75 mcg per day and apixaban 5 mg BID. She quit smoking five years ago after smoking a pack a day for 30 years. She is otherwise healthy and up to date on all her immunizations and screening tests. She has had no surgeries and has no allergies.

The staff performed a blood pressure measurement when she arrived, and it was 146/90 mm Hg.

1. You want to confirm a diagnosis of hypertension. Which of the following methods would be the best to make a diagnosis in this patient? Select **ONE**.
 - a. Have her record home readings with an automated blood pressure machine, seated correctly.
 - b. Repeat the automated reading in the office three times after having her sit for five minutes and in the correct position.
 - c. Repeat the office reading manually three times after having her sit for five minutes and in the correct position.
 - d. Arrange for a 24-hour ambulatory blood pressure assessment with an automated cuff.
1. You see her a week later after having her do her blood pressures at home correctly. Her average BP reading is 136/86 mm Hg. Which of the following is the best next step in managing her blood pressure? Select **ONE**.
 - a. Advise her to continue her healthy lifestyle and measure her blood pressure regularly.
 - b. Start her on ramipril and adjust her dose as needed.
 - c. Start her on ramipril and hydrochlorothiazide and adjust dose as needed.
 - d. Start her on ramipril, hydrochlorothiazide, and amlodipine and adjust dose as needed.
1. You see her two years later. She is now on maximum doses of ramipril, hydrochlorothiazide, and amlodipine. Her BP reading (done correctly) is now 148/94 mm Hg. Which of the following is now your best next step? Select **ONE**.
 - a. Add spironolactone to her medication.
 - b. Add a beta blocker to her medication.
 - c. Initiate urgent work-up for possible end-organ damage.
 - d. Accept her current BP reading as she is now 78 years old.

Answers:

1. C; can't rely on automated BP measurements due to a-fib.
2. C; Hypertension Canada 2025 guidelines recommend starting on two drugs right away; also higher CVS risk – start at systolic between 130–139.
3. A; Hypertension Canada 2025 suggest spironolactone as fourth drug.

Sample menu-style question - Dehydration

You are seeing a 40-year-old male patient of yours in a rural emergency room. You diagnosed him with community acquired pneumonia two days earlier. He was started on oral amoxicillin. He now has severe lethargy, muscle cramps, and postural dizziness.

He is known to have hypertension and type 2 diabetes. He is taking ramipril 5 mg OD, hydrochlorothiazide 12.5 mg OD, metformin 500 mg BID, and simvastatin 40 mg OD.

1. Before examining the patient, you are considering your differential diagnosis. Which one of the following is most likely the cause of his new symptoms? Select **ONE**.
 - a. QT prolongation from the antibiotic
 - b. Dehydration
 - c. Diabetic keto acidosis
 - d. Hypoxia from pneumonia
 - e. Hyponatremia
2. His vitals are as follows: BP 105/70 mm Hg, pulse 110/min, regular. O₂ saturation stable at 92% on room air. Resp rate 18/min. He does not appear to be in respiratory distress. He has bilateral scattered crepitations in his lungs. Heart sounds normal. Select three tests from the following list that you would want to order to rule out potential causes for his presentation. Select **THREE**.
 - a. Serum creatinine
 - b. HbA1C
 - c. ECG
 - d. Head CT scan
 - e. Bedside glucose testing
 - f. CXR
 - g. Postural BP measurements
 - h. White cell count
 - i. Arterial blood gas
3. While waiting for results to come back, which one of the following would be the best next step in managing this patient. Select **ONE**.
 - a. Change antibiotics to a different class
 - b. Initiate oxygen by mask at 2L/min
 - c. Start IV fluid replacement therapy
 - d. Start a vasopressor drug
 - e. Start IV insulin titration

Answers:

1. B
2. A, C, E
3. C