SOCIETY OF ACTUARIES

Group & Health Specialty Exam

Exam GHSPC

Date: Friday, November 4, 2022

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has 6 questions numbered 1 through 6 with a total of 40 points.

   The points for each question are indicated at the beginning of the question.

2. While every attempt is made to avoid defective questions, sometimes they do occur. If you believe a question is defective, the supervisor or proctor cannot give you any guidance beyond the instructions provided in this document.

Written-Answer Instructions

1. Each question part or subpart should be answered either in the Word document or the Excel file as directed. Graders will only look at work in the indicated file.

   a) In the Word document, answers should be entered in the box marked ANSWER. The box will expand as lines of text are added. There is no need to use special characters or subscripts (though they may be used). For example, β_1 can be typed as beta_1 (and ^ used to indicate a superscript).

   b) In the Excel document formulas should be entered. Performing calculations on scratch paper or with a calculator and then entering the answer in the cell will not earn full credit. Formatting of cells or rounding is not required for credit.

   c) Individual exams may provide additional directions that apply throughout the exam or to individual items.

2. The answer should be confined to the question as set.

3. Prior to uploading your Word and Excel files, each file should be saved and renamed with your five-digit candidate number in the filename.

4. The Word and Excel files that contain your answers must be uploaded before the five-minute upload period expires.

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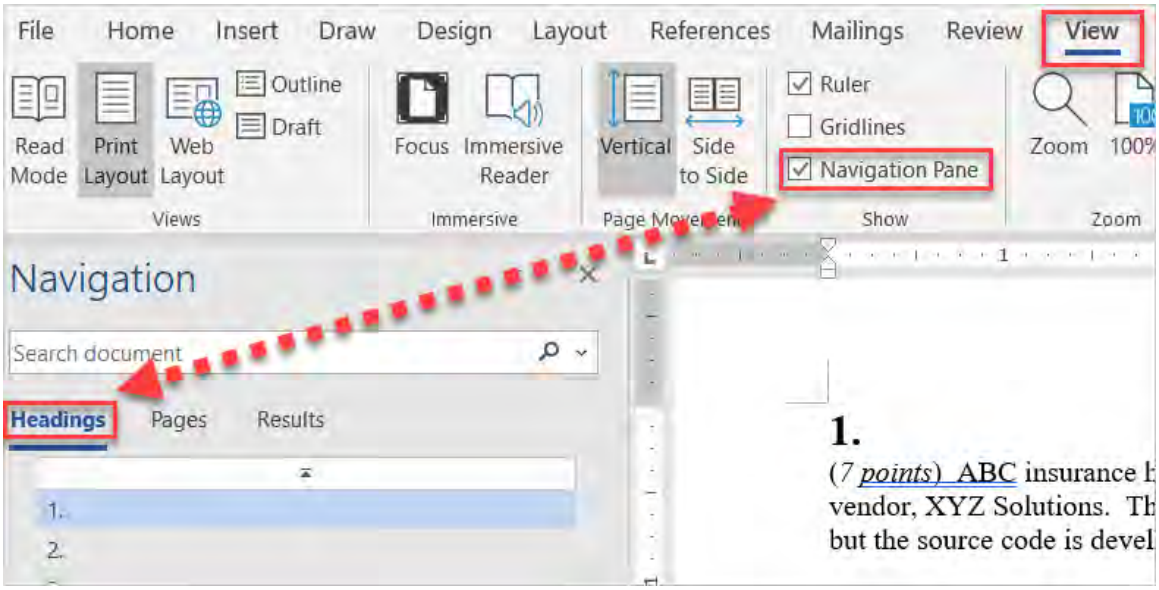
Navigation Instructions

Open the Navigation Pane to jump to questions.

Press Ctrl+F, or click View > Navigation Pane:



1.

(*6 points*)

(a) (*2 points*) Describe care management methods used to control health care utilization.

ANSWER:

(b) (*2 points*)

(i) Define "serious illness" in the context of population health community-based palliative care programs.

ANSWER:

(ii) Describe events near the end of life that would be considered an over-medicalized death.

ANSWER:

(c) (*1 point*) List the main components of population health community-based palliative care programs.

ANSWER:

(d) (*1 point*) Describe how population health community-based palliative care programs help the United States health care system move towards value-based payment models.

ANSWER:

2.

(*7 points*)

(a) (*2 points*)

(i) Define a clinical identification algorithm.

ANSWER:

(ii) Explain why a clinical identification algorithm is important for a health insurance company.

ANSWER:

(iii) List necessary factors to be considered when building a clinical identification algorithm.

ANSWER:

(b) (*2 points*) Explain reasons why the use of commercially-available grouper models are preferred to constructing a model from scratch.

ANSWER:

(c) (*3 points*) The projection of a Medicare Advantage plan's risk scores from the base period to the bid contract year includes several factors.

(i) Describe each factor.

ANSWER:

(ii) Identify the source of each factor.

ANSWER:

3.

(*7 points*)

(a) (*1 point*) Explain features of the actuarially-adjusted historical control methodology for evaluating care management outcomes.

ANSWER:

A health plan operates a care management program that has the goal of reducing the total cost of care for its members with diabetes or COPD. The accompanying Excel file contains data on the program. You are also given the following information about the program:

- The program has been in place for one full calendar year
- Program cost is $50 per engaged member per month
- Expected gross return on investment (ROI) is 2:1
- Members with diabetes or COPD have been enrolled in the program since Year 1 and for the entirety of the time they have been a member of the health plan.

(b) (*6 points*)

(i) (*5 points*) Calculate the per member per month (PMPM) gross savings and ROI for the first year of the program. Show your work.

The response for this part is to be provided in the Excel document

(ii) (*1 point*) Recommend whether the program should be continued. Justify your response.

ANSWER:

4.

(*7 points*)

(a) (*1 point*) Identify why long-term care insurance assumptions have typically resulted in underpricing the product.

ANSWER:

(b) (*3 points*) Evaluate the accuracy of the following statements. Justify your response.

(i) Higher than expected lapse rates contributed to the insolvency of some long-term care insurers.

ANSWER:

(ii) Lower than expected interest rates in the future can be problematic for long-term care insurers.

ANSWER:

(iii) A long-term care insurer entering into rehabilitation can put a policyholder in a bind.

ANSWER:

(c) (*3 points*) Describe items, according to ASOP 47, an actuary should consider in performing services related to risk mitigation.

ANSWER:

5.

(*7 points*) As documented in the article *Changing with the Times: The past and future of ACA Risk Adjustment*, to understand the broad impacts of the HHS-HCC model changes, risk scores were tracked over time by holding everything constant for a fixed sample population except for the HHS-HCC model changes each year from 2015 to 2020.

(a) (*4 points*)

(i) Describe the prominent patterns in risk score changes that were observed and the significance of each pattern to issuers.

ANSWER:

(ii) Describe the potential areas of improvement to the HHS-HCC risk adjustment model.

ANSWER:

You are given the following:

Member	Age and Gender	Status	Months in Base Period	Diagnoses
A	71 Male	Community, non-dual, aged	12	Diabetes without complications and multiple sclerosis
B	73 Male	Community, non-dual, aged	12	Two diabetes diagnoses (without complications and neuropathy) and multiple sclerosis
C	65 Female	Non-Medicaid, not originally disabled	6	None

Age/Gender Risk Factors

Gender	Age Group	New to Medicare	Community Members
Male	65 – 69	0.6	0.4
Male	70 – 74	0.7	0.5
Female	65 – 69	0.7	0.6
Female	70 – 74	0.8	0.7

5. Continued

Disease-Related Risk Factors

Disease	HCC Factors
Diabetes without complications	0.1
Diabetes with acute complications	0.4
Multiple sclerosis	0.7

- Annual risk score trend is 1.1%
- Annual population change factor is 0.5%
- Adjustment for the CMS Fee for Service Normalization factor is 1/1.03
- CMS Coding Adjustment from base year to bid year is 0.98

An analyst has calculated an average plan risk score of 1.1 for the base period. The analyst has also calculated the Part C contract year risk score as shown below for the Medicare Advantage bid.

Part C contract year risk score = 1.0634 = 1.1 * 1.011 * 1.005 * 1/1.03 * 0.98

(b) (*3 points*) Critique the analyst's calculations. Show your work. Justify your response.

The response for this part is to be provided in the Excel document

6.

(*6 points*)

(a) (*1 point*) Describe regulatory actions based on Total Adjusted Capital to Authorized Control Level (TAC-to-ACL) ratios.

ANSWER:

You are given the following:

Risk Category	H_0	H_1	H_2	H_3	H_4	TAC
Company 1	10	60	200	16	30	75
Company 2	5	40	175	12	22	85
Company 3	15	32	100	6	10	250
Company 4	8	21	75	6	8	50

(b) (*2 points*)

(i) Calculate the TAC-to-ACL ratio for each company. Show your work.

The response for this part is to be provided in the Excel document

(ii) Identify for each company what, if any, regulatory action needs to be implemented based on the TAC-to-ACL ratio.

ANSWER:

The state in which you are currently employed has not adopted the Risk-Based Capital (RBC) Model Act. Previously, you were employed in a state that had adopted the RBC Model Act.

(c) (*1 point*) Recommend to your manager why your company should follow the RBC Model Act. Justify your response.

ANSWER:

6. Continued

(d) (*2 points*) Describe differences in insurance risk factors between the Life and Health RBC formulas.

ANSWER:

****END OF EXAMINATION****