SOCIETY OF ACTUARIES

Group & Health Specialty Exam

Exam GHSPC

Date: Friday, May 13, 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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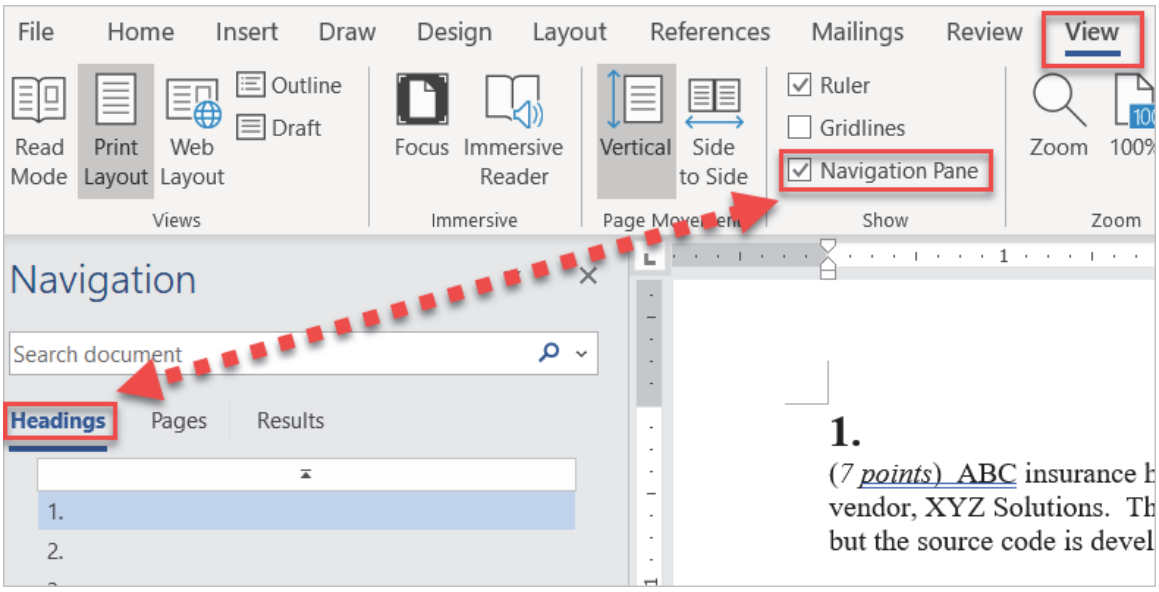
Navigation Instructions

Open the Navigation Pane to jump to questions.

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



1.

(*4 points*) You are given the following information on two commercial members from a diabetes self-management education or training (DSME/T) program:

$\alpha = 2$
$\beta_{age} = -0.06$
$\beta_{gender} = 0.3$
$\beta_{plan} = -0.2$

Member	Age	Gender	Benefit Plan
1	25	0 (male)	1 (HMO)
2	35	1 (female)	0 (PPO)

(a) (*2 points*) Calculate the propensity score for each member. Show your work.

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

(b) (*1 point*) Interpret each member's propensity score.

ANSWER:

(c) (*1 point*) Describe the limitations of applying the propensity score matching results from the DSME/T program to other populations.

ANSWER:

2.

(*8 points*)

(a) (*3 points*) Describe business risk and its components as it relates to the Health Risk-Based Capital (RBC) formula.

ANSWER:

(b) (*1 point*)

(i) Define underwriting risk as it relates to the Health RBC formula.

ANSWER:

(ii) Describe how underwriting risk is calculated.

ANSWER:

(iii) State exceptions for why underwriting risk factors may differ across health insurance companies.

ANSWER:

2. Continued

(c) (*2 points*)

(i) Define the purpose of the Managed Care Risk Adjustment Factor.

ANSWER:

(ii) Describe the categories used in the Managed Care Risk Adjustment Factor.

ANSWER:

(iii) Describe how the Managed Care Risk Adjustment Factor is calculated.

ANSWER:

You are given the following:

Risk Category	Relative Risk (indexed to $H_2 = 100$)
H_1	40
H_2	100
H_3	25
H_4	30

- There is no Insurance Affiliates and Miscellaneous Other Amounts

(d) (*2 points*) Calculate the required increase in risk to achieve an $800 marginal impact of RBC after covariance to underwriting risk. Show your work.

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

3.

(*9 points*)

(a) (*2 points*)

(i) Discuss considerations actuaries should account for in projecting risk scores for Medicare Advantage bids, other than those prescribed by the Center for Medicare and Medicaid Services (CMS).

ANSWER:

(ii) Explain the consequences of projecting risk scores that are too high or too low.

ANSWER:

(b) (*3 points*)

(i) State the two models of accountable care organization (ACO) gainsharing as part of the Medicare Shared Savings Program (MSSP).

ANSWER:

(ii) Describe requirements an ACO must pass in order to be allowed to share savings with CMS.

ANSWER:

(iii) Explain how the provider group-based ACO is expected to generate savings through the MSSP.

ANSWER:

3. Continued

An ACO has three members, all of whom are of the same Medicare enrollment type. The following information is for one of the benchmark years.

Claims Type	ACO Participant	Member 1 Total Claims	Member 2 Total Claims	Member 3 Total Claims
Inpatient hospital	Yes	$58,000	-	-
Hospital bad debt charge	Yes	$100	-	-
Skilled nursing facility	Yes	$5,000	-	-
Physician A	Yes	$700	$200	-
Physician B	No	-	$800	-
Hospice	Yes	-	-	$6,000
Durable medical equipment	Yes	$1,300	-	-
Prescription drugs	-	$500	-	-
Months Enrolled in ACO		12	12	6

(c) (*4 points*)

(i) (*1 point*) Describe the separate Medicare enrollment types.

ANSWER:

(ii) (*3 points*) Calculate the ACO's average per capita expenditure for the benchmark year. Show your work.

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

4.

(*6 points*)

(a) (*2 points*) Describe opportunity analysis.

ANSWER:

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

(i) Traditional condition groupings, such as Hierarchical Condition Categories (HCCs), are a common grouping algorithm for segmenting membership when applying opportunity analysis.

ANSWER:

(ii) Although a randomized controlled trial provides very robust evidence of efficacy, it can be subject to some biases.

ANSWER:

(iii) Opportunity analysis recognizes and addresses the economics of program planning in a system which is resource constrained.

ANSWER:

(iv) Information on any and all care management programs currently in place should be included when performing an opportunity analysis.

ANSWER:

4. Continued

(v) A single intervention to target members with a mental health condition is a successful application of the opportunity analysis approach.

ANSWER:

(vi) Segmentation of a population by cost and frequency is a useful application of the opportunity analysis approach.

ANSWER:

(c) (*1 point*) List the steps for implementing a care management program using the opportunity analysis approach.

ANSWER:

5.

(*6 points*)

(a) (*2 points*) Identify notable changes in ACA Risk Adjustment over the life of the program.

ANSWER:

You are an actuary for ABC Insurance Company, a Medicaid MCO in a single state. The state Medicaid agency has determined that it is going to retrospectively apply risk adjustment factors to the capitation payments from 10/01/2020 forward.

You are given the following:

Temporary Assistance for Needy Families (TANF)	Cohort Weight	Condition (ERG) Factor	Age/Sex Factor	Imputed ERG Factor
ABC Insurance Company Long Cohort	0.8200	0.3910	0.4000	n/a
ABC Insurance Company Short Cohort	0.1800	n/a	0.3500	**?**
All MCOs Long Cohort	0.8069	0.4029	0.4029	n/a
All MCOs Short Cohort	0.1931	n/a	0.4022	0.4022

ABC Insurance Company	TANF	SSI with Medicare	SSI without Medicare	Non-Medicaid
10-01-20 Capitation Rate Per Member Per Month (PMPM)	$100	$150	$700	$150
Bid Risk Contingency PMPM	$2	$3	$14	$10
Bid Admin PMPM	$8	$12	$56	$40
Premium Tax PMPM	$2	$3	$14	$10
Risk Adjustment Factor	**?**	1.0134	1.0009	0.9974

5. Continued

- The long cohort consists of members with at least 6 months of eligibility during the experience period.
- The short cohort consists of members with less than 6 months of eligibility during the experience period.
- Members with less than six months of enrollment during the experience period are given a risk factor equal to 50% of their age/sex factor plus 50% of an adjusted plan factor, i.e. imputed ERG factor.
- The unadjusted capitation rate is 1.0.
- "Phase-in" weights the condition-based score and the unadjusted capitation rate 80%/20% for the year.
- Total average risk score for All MCOs is 0.4028.
- Budget neutrality adjustment is 1.0.

(b) (*4 points*) Calculate the risk adjusted capitation rates for ABC Insurance Company. Show your work.

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

6.

(*7 points*)

(a) (*1 point*) Describe underwriting considerations health insurers need to be aware of with respect to COVID-19.

ANSWER:

(b) (*6 points*)

(i) Describe market consequences that should be considered when modeling market-related COVID-19 stress test scenarios.

ANSWER:

(ii) Describe COVID-19 scenarios that could be tied to an insurer's morbidity experience.

ANSWER:

(iii) Describe operational risk outcomes that could be attributed to adverse COVID-19 developments.

ANSWER:

(iv) Describe a stress test scenario that could identify the impact of COVID-19 on medical expense inflation.

ANSWER:

****END OF EXAMINATION****