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**SOCIETY OF ACTUARIES**  
**Group and Health Core Exam – U.S.**

# Exam GHCORU

## AFTERNOON SESSION

**Date:** Wednesday, April 26, 2017

**Time:** 1:30 p.m. – 3:45 p.m.

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### INSTRUCTIONS TO CANDIDATES

#### General Instructions

1. This afternoon session consists of 5 questions numbered 9 through 13 for a total of 40 points. The points for each question are indicated at the beginning of the question. Questions 11 and 12 pertain to the Case Study.
2. Failure to stop writing after time is called will result in the disqualification of your answers or further disciplinary action.
3. 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 on the exam booklet.

#### Written-Answer Instructions

1. Write your candidate number at the top of each sheet. Your name must not appear.
2. Write on only one side of a sheet. Start each question on a fresh sheet. On each sheet, write the number of the question that you are answering. Do not answer more than one question on a single sheet.
3. The answer should be confined to the question as set.
4. When you are asked to calculate, show all your work including any applicable formulas.
5. When you finish, insert all your written-answer sheets into the Essay Answer Envelope. Be sure to hand in all your answer sheets because they cannot be accepted later. Seal the envelope and write your candidate number in the space provided on the outside of the envelope. Check the appropriate box to indicate morning or afternoon session for Exam GHCORU.
6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.



## **CASE STUDY INSTRUCTIONS**

**The case study will be used as a basis for some examination questions. Be sure to answer the question asked by referring to the case study. For example, when asked for advantages of a particular plan design to a company referenced in the case study, your response should be limited to that company. Other advantages should not be listed, as they are extraneous to the question and will result in no additional credit. Further, if they conflict with the applicable advantages, no credit will be given.**



**\*\*BEGINNING OF EXAMINATION\*\***

**Afternoon Session**  
***Beginning with Question 9***

- 9.** (6 points) You are a benefits consultant advising a Canadian-based company exploring the possibility of establishing a branch office in the United States. The employees would initially consist of transfers from the Canadian office.

The Canadian benefits plan consists of a high-deductible health plan (HDHP) combined with a health spending account. You are provided with the following plan design information:

- Deductible: \$1,000
- Health Spending Account: The employer provides \$500 annually
- Employer Coinsurance: 80% for all benefits, once the deductible has been paid

You have been asked whether a similar arrangement could be established in the United States.

- (a) (1 point) Explain the advantages of a health savings account over other forms of individual accounts in the United States.
- (b) (3 points) Compare and contrast major features of health spending accounts in Canada with health savings accounts in the United States.
- (c) (2 points) Next year's average claims are expected to be:

<b>Claim Type</b>	<b>Amount</b>
Prescription drugs	\$1,500
Physician services	\$8,000

Assuming that management's objectives include:

- To maintain the expected Canadian employee/employer percentage split of claim costs in the United States
- To establish a HDHP with a health savings account of \$2,500
- To maintain the employer coinsurance level at 80%

Determine the required deductible to meet management's stated objectives. Ignore exchange rate and pricing differences between Canada and the United States. Show your work.

**10.** (6 points) Insurer XYZ has asked you to help analyze its medical trends.

You are provided with the following information:

Service Category	2015 Experience			Annual Trend Factors	
	Utilization Units	Utilization per 1,000	Allowed PMPM	Unit Cost	Utilization per 1,000
Inpatient Facility	Days	750	\$375.00	3.00%	-0.50%
Skilled Nursing Facility	Days	600	\$50.00	1.50%	0.00%
Home Health	Visits	200	\$3.50	1.50%	0.00%
Emergency Room	Visits	300	\$30.00	-1.00%	0.00%
Urgent Care	Visits	6,000	\$100.00	0.00%	2.00%

Insurer XYZ is considering implementing one or both of the cost-saving programs described below:

- Program A is designed to shift 30% of expected Emergency Room visits to Urgent Care visits.
- Program B is designed to change the unit cost trends as follows:
  - Inpatient Facility to 2.00%
  - Skilled Nursing Facility to 0.50%
  - Home Health to 0.50%

The PMPM cost of each program is:

	Program A	Program B
Implementation costs (first year)	\$3.00	\$2.00
Maintenance costs (year 2 and beyond)	\$2.00	\$1.50

Assume the implementation and maintenance costs are paid in full at the beginning of the year.

Insurer XYZ wants to maximize savings but can only implement one of the programs in 2016. The program(s) in 2017 must be funded by 2016 savings net of implementation costs.

- (a) (1 point) List the components of medical trend.
- (b) (1 point) Describe the most common types of managed care overlays.
- (c) (4 points) Determine which program Insurer XYZ should implement in 2016 and which program(s) will be in-force in 2017. Justify your position and show your work.

*Questions 11 and 12 pertain to the Case Study.  
Each question should be answered independently.*

- 11.** (10 points) You are an actuary at Your Eyes and have been asked to review its dental product offerings.

Management believes that the highest selling PPO50 plan design with the following modifications would be the most appropriate for the new individual portfolio:

- No annual maximum
- No deductible
- \$50 copay for each service rendered by a non-preferred provider

In order to appeal to as large a population as possible, management would prefer to offer the new dental product through the Broad network. However, if the company's expected claims costs exceed 120% of its expected claims costs under the Tight network using the 2014 data below, management will elect the Tight network.

	<b>2014 Average Utilization per 1,000</b>	<b>2014 Fee Schedule Charge</b>
<b>Diagnostic Services</b>		
- Oral Exams	700	\$40.00
- X-rays	630	\$35.00
<b>Preventative Services</b>		
- Prophylaxis	650	\$75.00
- Fluoride	200	\$30.00
<b>Restorations</b>		
- Amalgam	250	\$120.00
- Resin	220	\$150.00

- (a) (1 point) Explain why dental insurance is typically only offered in the group market.
- (b) (1 point) List the risks Your Eyes faces in entering the individual dental market and describe strategies available to Your Eyes to mitigate these risks.
- (c) (1 point) List the data Your Eyes could use to price the individual dental plan.
- (d) (7 points) Determine which network management will elect, assuming that 90% of all services are performed by preferred providers regardless of the network. Show your work.

*Questions 11 and 12 pertain to the Case Study.  
Each question should be answered independently.*

**12.** (12 points) John Smith is a Long Term Care (LTC) product manager at Thunderball. New product sales are decreasing. Consumer feedback indicates that potential customers believe prices are high and fear future rate increases.

- (a) (3 points) John conducts an actual-to-expected analysis of policies 4, 6 and 10, which are representative of the majority of Thunderball's block of business.

The policies have experienced the following historical claims:

	<b>Gender</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Policy 4</b>	M	\$0	\$0	\$0
<b>Policy 6</b>	M	\$17,000	\$4,000	\$0
<b>Policy 10</b>	F	\$0	\$0	\$10,000

Calculate the actual-to-expected total claims ratio for each of 2008, 2009 and 2010. Show your work.

- (b) (1 point) Identify LTC's current phase in the product development cycle and list the remaining phases. Justify your position.
- (c) (5 points) As a product manager, John is concerned that Thunderball's LTC product will be replaced with a better, less expensive product in the market. Describe five steps John should take to adapt Thunderball's LTC product to avoid obsolescence and recommend specific actions John should take for each of the steps.
- (d) (3 points) Despite consumer feedback, John's analysis shows that Thunderball's LTC product experience justifies a rate increase. He submits a rate filing Memorandum to the Montana Department of Insurance including the Actuarial Certification below. The underlying projections were based on all 12 claims in Montana since product inception and on assumptions John received from his colleague, Jane Brown, FSA, MAAA. Because Jane has many years of LTC product experience, John feels confident accepting Jane's data and assumptions without further review.



## 12. Continued

*Actuarial Certification for Thunderball Memorandum*

*I have based this filing on Montana state-specific assumptions with no reliance on data from other states.*

*I certify that this memorandum has been prepared in compliance with all applicable Actuarial Standards of Practice, including ASOP Numbers 23 and 25.*

*John Smith, FSA, MAAA*

Critique John's Certification and propose any changes needed to comply with the referenced ASOPs.

- 13.** (6 points) You are a FSA working for DrugsRUs, a PBM that specializes in offering standalone prescription drug benefits for Commercial groups.

Underwriting has received a Request for Proposal from Nova Sporting Goods for 2017. One of the main priorities for Nova is to decrease their drug costs. Nova has a \$5 copay for all brand name and generic drugs. Nova’s union contract stipulates that the brand name drug copay can be at most twice the generic drug copay. Copays must be whole dollar values.

You are investigating various cost savings strategies, including better prescription drug discounts, lower dispensing fees, higher member copays and higher rebates through restrictions on the formulary.

Nova has provided underwriting with the following data:

Year	Brand AWP	Generic AWP	Number of Brand Scripts	Number of Generic Scripts	Brand WAC	Generic WAC
2015	\$5,360,000	\$15,250,000	16,000	183,000	\$4,288,000	\$12,200,000

- (a) (3 points) Nova wants to see the cost impact of implementing a two-tier formulary that would have saved Nova between \$450,000 and \$500,000 in 2015. Recommend alternative copays and calculate the resulting savings. Justify your recommendation. Show your work.
- (b) (3 points) The manufacturing team at DrugsRUs recently received rebate offers for two competing brand name drugs:

	AWP per script	Rebate Offer
Drug A	\$350	38%
Drug B	\$250	13%

Only one rebate offer can be accepted, and the drug with the rebate will be given preferred status.

### **13. Continued**

Assume the following:

- If Drug A is preferred, then 75% of claims will be for drug A
- If Drug B is preferred, then 60% of claims will be for drug B
- The average copay for a preferred drug is \$30
- The average copay for a non-preferred drug is \$60
- The brand name discount is 15%
- The dispensing fee per script is \$1.00

Determine which rebate offer will maximize cost savings for DrugsRUs. Show your work.

**\*\*END OF EXAMINATION\*\***  
**Afternoon Session**

**USE THIS PAGE FOR YOUR SCRATCH WORK**