SOCIETY OF ACTUARIES
Group and Health – Advanced

Exam GHADV

AFTERNOON SESSION

Date: Thursday, October 30, 2014
Time: 1:30 p.m. – 3:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 7 questions numbered 9 through 15 for a total of 40 points. The points for each question are indicated at the beginning of the question.
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 GHADV.
6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

Tournez le cahier d'examen pour la version française.

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Exam GHADV

****BEGINNING OF EXAMINATION****
Afternoon Session
Beginning with Question 9

9. (*4 points*)

(a) (*1 point*) Define and explain when an employer would use each of the following stop loss contract types:

(i) Paid

(ii) 15/12

(iii) 12/18

You are given the following for a given employer group:

	Paid Date →								
Incurred Quarter	3Q2010	4Q2010	1Q2011	2Q2011	3Q2011	4Q2011	1Q2012	2Q2012	3Q2012
3Q2010	$57,000	$16,000	$2,000	$11,000		$3,000			
4Q2010		$98,000	$57,000	$13,000				$4,000	
1Q2011			$18,000	$112,000	$32,000		$4,000		
2Q2011				$12,000	$5,000	$2,000	$1,000	$1,000	$1,000
3Q2011					$5,000		$1,000		
4Q2011						$5,000	$5,000	$5,000	
1Q2012							$12,000	$8,000	$4,000
2Q2012								$25,000	$10,000
3Q2012									$35,000

(b) (*2 points*) Calculate the claim payments that would be used to calculate aggregate stop loss liabilities for calendar year 2011 for each of the three contract types listed in part (a). Show your work.

You are given:

CY2011 Claim Experience

	Total
Member 1	$230,000
Member 2	$95,000
Member 3	$90,000
Annual trend	10.0%

Specific Stop Loss Deductible for 2011 and 2012 = $100,000

(c) (*1 point*) Calculate the impact of leveraging. Show your work.

10. (*6 points*) You are an actuary working for San Jacinto Health Plan (SJHP). In 2013, SJHP implemented a clinical program to help reduce preventable re-admissions and reduce costs related to a few key diseases.

(a) (*2 points*) Explain the role of the Value Chain components in program design and assessment.

You are given:

	2012 Number of Admissions	2012 Number of Re-Admissions
Asthma	180	63
Obesity	312	78
Diabetes	280	92

	2013 Number of Admissions	2013 Number of Re-Admissions
Asthma	200	50
Obesity	340	51
Diabetes	291	87

	2013 Cost per Admission
Asthma	$7,500
Obesity	$7,500
Diabetes	$7,000

(b) (*2 points*) Calculate the savings from the reduced re-admissions. Show your work.

(c) (*2 points*) Discuss other considerations in assessing the program's effectiveness.

11. (*5 points*) You are a consulting actuary that has been appointed to prepare the actuarial opinion for All in the Family Health Insurance Company (AFHIC).

The president of AFHIC is your sister so you want to make sure you do a very thorough job in your analysis.

During the course of your review you find the following:

- All of the data was provided by AFHIC's CFO, Joe Jackson. You noted that there were no paid claims reported during the first quarter of 2012. Joe told you that the company lost the feed with the paid and incurred detail for those months. He provided you the total paid claims for each month and indicated it would be appropriate to assume that the incurred dates were distributed in the same pattern as the second quarter since processing times in the second quarter were slightly faster than in the first quarter.

- The company has a small line of Long Term Care (LTC) business that has contract reserves of $2 million and claim reserves of $45,000 (compared to total health reserves of over $500 million). AFHIC provided valuation factors but could not provide any pricing memos or assumptions behind the valuation factors. You believe you can still reach an unqualified opinion without additional detail on the LTC reserves due to overall materiality.

- AFHIC has a Long Term Disability (LTD) line of business and holds disabled life reserves based on statutorily required claim termination rates and interest rates. The line of business is too new and too small to allow for any experience studies of the adequacy of the assumed claim termination rates.

- AFHIC uses a global capitation for approximately 25% of its health insurance premiums where providers are paid 85% of premium monthly for all required medical services. Since the payment is made to the providers at the beginning of each month for that month's services, AFHIC is holding no liability for this arrangement.

- When you reconciled paid claims to the ledger, you noted that the ledger showed approximately 1.5% more claims than the lags. AFHIC's controller attributed this to claims from one claim system that did not flow into the data warehouse. The controller indicated that all of the payment timing metrics for this administrator were identical to the rest of AFHIC's metrics. You chose to adjust for this by increasing the unpaid claim liability estimate from the lags 1.5%.

11. Continued

- AFHIC has provider liability that is based on provider adherence to certain quality measures. They establish the liability based on the average payout per member over the last three years. This was $25 million in 2009, $1 million in 2010 and $35 million in 2011. You have concluded that this produces a reasonable estimate of the liability but believe the variability of recent payouts increases the anticipated variability of the estimates.

Explain the disclosures you will need to include in your actuarial report as required by the Actuarial Standards of Practice (ASOP).

12. (*7 points*) You are an actuary at Rolling Bread Insurance Company (RBIC). Management wants to create an HMO in a new service area and needs to build a new provider network.

(a) (*1 point*) Outline the reasons RBIC and providers would want to contract with each other.

RBIC is seeking to bundle payment for several procedures in the new service area.

You are given the following:

(b)

Procedure	Frequency Per 1,000 Members	Average Length of Stay	Average Allowed Costs				90th Percentile Allowed Costs	Re-admissions
			Pre-Op	Operative	Post-Discharge	Total Costs		
A	2.4	27.3	$2,586	$31,326	$3,293	$37,205	$125,385	9.5%
B	112.8	3.5	$642	$30,655	$1,396	$32,693	$112,593	35.9%
C	86.2	4	$740	$29,370	$2,559	$32,669	$44,987	8.3%

(c) (*2 points*)

(i) Discuss considerations in selecting which procedures to include in a bundling payment mechanism.

(ii) For each procedure in the table, recommend whether or not to bundle. Justify each recommendation.

RBIC is also considering a physician risk pool program for this new HMO but is unclear how it would work. You decided to use the experience of a provider group in an existing HMO as an example.

12. Continued

You are given the following:

	PMPM
Primary Care Capitation	$60
Specialty Pool Rate	$97
Facility Pool Rate	$229
Primary Care is subject to a 5% Withhold	
Facility is subject to 50% Risk Sharing	

Claim Experience: Incurred in Calendar Year, Paid Through June of the Following Year	
Member months	64,572
Primary Care claims	$3,421,500
Specialty claims	$6,601,294
Facility claims	$13,903,738

(d) (*4 points*)

(i) Calculate the risk pool payment for the provider group.

(ii) Identify potential obstacles in establishing a risk pool program for this HMO.

13. (*9 points*)

(a) (*1 point*)

(i) Explain why it is difficult to demonstrate disease management (DM) program savings despite clear evidence of improvement to health plan quality outcomes.

(ii) Propose solutions to resolve this difficulty.

(b) (*4 points*) For health plan care management:

(i) Describe initiatives.

(ii) Summarize major findings found in literature.

(c) (*1 point*) Define Return on Investment (ROI) and explain its components in a managed care perspective.

You are a health actuary for Griswold Health Plan (GHP). With increased focus on medical care quality and efficiency, GHP piloted two DM programs to assist members with congestive heart failure improve their condition. GHP's medical director is asking for your expertise in assessing program effectiveness.

You are given:

	Program 1	**Program 2**
Number of plan members	20,000	20,000
Number of members with a congestive heart failure condition	200	700
Annual congestive heart failure program cost	100,000	500,000
Annual gross savings of the congestive heart failure program	500,000	1,400,000

(d) (*2 points*) Calculate the following for both programs. Show your work.

(i) ROI

(ii) The Average Net Savings per member per month (PMPM).

(iii) The Average Net Savings per chronic member per month (PCMPM).

(iv) The Marginal Net Savings PCMPM for the first 200 members.

(v) The Marginal Net Savings PCMPM for the next 500 members.

(e) (*1 point*) Recommend which program GHP should implement. Justify your recommendation.

14. (*4 points*) You are the pricing actuary for Husker Insurance Company (HIC). You have been asked to assist with the analysis and pricing of a group, Big Red Corn Husking (BRCH).

(a) (*1 point*) List the group and plan design characteristics to consider when underwriting group disability insurance.

(b) (*1 point*) Describe the challenges when underwriting a self-managed STD plan.

Assume the following:

- Benefit = 70% of pre-disability income
- $10,000 pre-disability, pre-tax monthly earnings
- Overall Tax Rate while working = 25%
- Overall Tax Rate while disabled = 20%

BRCH's Short-Term Disability (STD) plan is currently a self-managed plan, but BRCH is considering insuring the risk going forward.

(c) (*1 point*) Calculate both the taxable and tax-free Income Replacement Ratios for this individual. Show your work.

(d) (*1 point*) In order to save money on their employee benefits, BRCH is considering offering a 70% Voluntary Long-Term Disability (LTD) benefit for their executives.

(i) Describe potential rating challenges.

(ii) Recommend possible plan design changes. Justify your answer.

15. (*5 points*) The Human Resources Vice President (VP) of your company has proposed a group life policy with the following face amounts:

Age	Company Officers	Other Employees
0-39	$100,000	$50,000
40-64	$200,000	$50,000
65+	$300,000	$75,000

(a) (*1 point*) List the elements to review in determining if the plan is to be considered a group life insurance product for purposes of Internal Revenue Code Section 79.

(b) (*2 points*) Describe taxation issues that should be considered for this policy.

The carrier is considering dropping your coverage due to their concerns with concentration risks.

(c) (*2 points*)

(i) Describe the types of concentration risks associated with group life insurance.

(ii) Describe potential issues that arise when determining concentration risk.

(iii) Recommend and explain a potential solution to address the carrier's concern.

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

USE THIS PAGE FOR YOUR SCRATCH WORK

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