
SOCIETY OF ACTUARIES
Group and Health – Advanced

Exam GHADV

AFTERNOON SESSION

Date: Thursday, October 29, 2015

Time: 1:30 p.m. – 3:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 5 questions numbered 11 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.

****BEGINNING OF EXAMINATION****
Afternoon Session
Beginning with Question 11

11. (4 points)

- (a) (1 point) Explain major properties of quality of care.
- (b) (1 point) Explain limitations that exist when using diagnosis or procedure codes to assist in determining quality of care.

You are an actuary at HIJ Corp. HIJ is implementing a program requiring anyone who has had a heart attack in the last 12 months to be on a statin medication.

You are given the following data concerning this program, which was implemented on 1/1/2012:

Year	Enrolled Members	Members with a Heart Attack	Members Taking a Statin
2011	90,000	9,000	500
2012	100,000	10,000	1,000
2013	125,000	11,500	2,300
2014	130,000	13,000	4,900

- (c) (1 point) Evaluate whether or not the program is having a positive impact. Show your work. Justify your answer.

You have been asked by the Chief Medical Officer to review the usefulness and accuracy of the savings statistic for this program.

- (d) (1 point) Propose questions that should be asked to improve the calculated savings statistic.

12. (14 points) Your company recently purchased Acquisition Target Insurance (ATI), whose sole business is selling Medicare Advantage Special Needs Plans (MA-SNPs). ATI focused on achieving high membership in its plans. Your company, by contrast, desires to optimize care management and patient outcomes.

- (a) (2 points) Describe how care management programs improve quality.
- (b) (2 points) List and describe types of care management programs for:
 - (i) Prescription benefits
 - (ii) Behavioral Health (BH) benefits
- (c) (3 points) Compare and contrast the objectives of care management for:
 - (i) Prescription benefits
 - (ii) Behavioral Health (BH) benefits

You project the following experience for the MA-SNPs if your company continues to use ATI's approach to providing benefits:

Service	Utilization per 1,000	Unit Cost	Per Member Per Month (PMPM) Claims Cost
Medical			
Inpatient	400 admits	\$4,500/admit	\$150
Outpatient	2,500 services	\$1,440/service	\$300
Professional	9,000 visits	\$200/visit	\$150
Pharmacy	30,000 scripts	\$120/script	\$300
Behavioral Health			
Inpatient	400 admits	\$1,500/admit	\$50
Professional	2,000 visits	\$90/visit	\$15

12. Continued

The following table details the expected impact of each new care management approach your company will adopt:

Program	Impact
Medical Provider Contracting	10% reduction in Inpatient unit costs; 20% reduction in Outpatient unit costs
Pharmacy Formulary	10% reduction in Pharmacy utilization; 10% reduction in Pharmacy unit cost
Pharmacy Step Therapy	20% reduction in Pharmacy utilization; 10% reduction in Pharmacy unit cost
Prior Authorization	20% reduction in Medical Inpatient utilization; 50% reduction in Medical Outpatient utilization
Behavioral Health Network	50% reduction in BH Inpatient unit costs; 60% reduction in BH Professional unit costs; 50% reduction in BH Inpatient utilization

- (d) (4 points) Calculate the savings your company should expect from each program individually and in total. Show your work.
- (e) (3 points) Evaluate how each care management approach will impact quality.

13. (6 points) You are a valuation actuary with responsibility for setting the incurred but not reported (IBNR) reserves for health plan benefits.

(a) (1 point) Describe necessary characteristics for the development method to work well.

You are given the following paid claims for a product which launched on January 1, 2015:

Paid Claims By Month Incurred (000's)									
Month Incurred									
2015	January	February	March	April	May	June	July	August	Total
January	\$650								\$650
February	\$1,800	\$450							\$2,250
March	\$1,250	\$1,600	\$800						\$3,650
April	\$700	\$1,450	\$1,500	\$300					\$3,950
May	\$300	\$800	\$1,150	\$2,200	\$775				\$5,225
June	\$125	\$400	\$950	\$950	\$2,350	\$980			\$5,755
July	-\$200	\$25	\$450	\$600	\$1,400	\$2,700	\$1,250		\$6,225
August	\$15	-\$45	\$55	\$250	\$900	\$1,850	\$3,100	\$550	\$6,675
Total	\$4,640	\$4,680	\$4,905	\$4,300	\$5,425	\$5,530	\$4,350	\$550	

You have decided to use the development method based off of the January incurred payment pattern.

(b) (3 points) Calculate the IBNR reserve as of August 31, 2015. Show your work.

You are given the following paid claims and IBNR as of December 31, 2015:

Paid Claims by Month Incurred (000's)									
Month Incurred									
2015	January	February	March	April	May	June	July	August	Total
Paid Claims Through 12/31/15	\$4,640	\$4,730	\$5,405	\$5,500	\$6,925	\$7,730	\$6,750	\$5,050	\$46,730
IBNR as of 12/31/15	\$0	\$0	\$0	\$0	\$0	\$650	\$1,400	\$3,000	\$5,050
Total	\$4,640	\$4,730	\$5,405	\$5,500	\$6,925	\$8,380	\$8,150	\$8,050	

(c) (2 points)

(i) Determine the sufficiency or deficiency of the August 31, 2015 IBNR as of December 31, 2015. Show your work.

(ii) Describe potential reasons for the sufficiency or deficiency.

14. (5 points) You are underwriting a new individual critical illness insurance policy.

You are given the following assumptions and per member per month (PMPM) claims costs:

- 0% medical cost trend
- 20% expense load
- 5% margin & investment income load

Year Since Diagnosis	Member 1		Member 2		Member 3		Average Cost For All Other Members
	Removal of Tumor	All Other Conditions	Diabetes	All Other Conditions	Heart Disease	All Other Conditions	
-2	0	\$125	0	\$250	0	\$95	\$100
-1	0	\$125	0	\$250	0	\$95	\$100
0	\$900	\$125	\$75	\$250	\$50	\$95	\$100
1	\$100	\$125	\$75	\$250	\$50	\$95	\$100
2	0	\$125	\$75	\$250	\$50	\$95	\$100

For each member:

- (a) (3 points) Recommend an underwriting technique. Justify your recommendation.
- (b) (2 points) Calculate the premium based on your recommendation. Show your work.

15. (11 points) You are an actuary responsible for large group accounts. Your responsibilities include new business underwriting, contract renewals and experience refund calculations.

- (a) (1 point) Define criteria used to screen, approve and classify large group prospects.
- (b) (2 points) Explain considerations related to the development of large group proposals.
- (c) (2 points) Describe alternative funding arrangements available in the market.
- (d) (2 points) Describe advantages and disadvantages of self-funding an employee benefit plan.

You are evaluating the following large group contract for renewal. The customer currently has a comprehensive program with the following experience:

	Comprehensive Program
Prior Year Claims Experience Per Employee	\$10,000
Prior Year Number of Employees	50,000

You are given the following information for a proposed Choice program:

	Proposed PPO	Proposed HMO	Proposed EPO
Relative Benefit Value	1.05	1.00	0.95
Provider Discount Savings	1.10	0.95	0.85
Projected Enrollment	10,000	20,000	30,000
Selection Factor	1.20	1.05	0.90

Assume a 5% annual claims trend.

- (e) (2 points) Calculate the projected claims costs for the following year for the:
 - (i) Comprehensive program. Show your work.
 - (ii) Choice program. Show your work.
- (f) (2 points) Recommend a program to your customer. Justify your answer.

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

USE THIS PAGE FOR YOUR SCRATCH WORK

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