

Exam GHADV

MORNING SESSION

Date: Thursday, November 1, 2018

Time: 8:30 a.m. – 11:45 a.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 100 points. It consists of a morning session (worth 60 points) and an afternoon session (worth 40 points).
 - a) The morning session consists of 9 questions numbered 1 through 9.
 - b) The afternoon session consists of 6 questions numbered 10 through 15.

The points for each question are indicated at the beginning of the question. Questions 10-15 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 GHADV.
6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

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Tournez le cahier d'examen pour la version française.

****BEGINNING OF EXAMINATION****
Morning Session

1. (5 points)

- (a) (1 point) Describe the purpose and function of creating an Accountable Care Organization (ACO).
- (b) (2 points)
- (i) Describe areas of improvement targeted by ACOs.
- (ii) Identify an example of an approach or intervention for each area.

You work for an ACO that has adopted a strategy to reduce costs due to heart surgery, including improving outcomes in the following categories:

- Follow-up physician visits
- Prescription drug utilization
- Hospital readmissions

You are given the following:

- Target Population is 10,000 members
- Cost Trend is 0%

	Reference Population		Target Population		
	Utilization		Utilization		Costs
	Baseline Period	Intervention Period	Baseline Period	Intervention Period	
Follow-up physician visits per member per month	2.00	2.05	3.00	3.02	\$80 per visit
Prescriptions per member per month	0.95	1.00	3.50	3.75	\$50 per script
Hospital Readmission per thousand per month	5.00	5.15	6.00	6.10	\$25,000 per admission

- (c) (2 points) Calculate:
- (i) Savings for each category
- (ii) Overall program savings

Show your work.

2. (6 points) XYZ Company was recently divested from its larger parent company. As part of the divestiture, XYZ wants to explore transitioning from a self-insured funding arrangement for its medical coverage to a fully-insured funding arrangement.

(a) (2 points) Describe advantages and disadvantages of self-insured and fully-insured arrangements.

XYZ is considering two stop loss coverage options.

- Aggregate Stop Loss with a 125% threshold
- Specific Stop Loss

(b) (2 points) Sketch and describe graphs to illustrate how each option may limit the plan's volatility.

You are given:

Group	Risk Factor	Parent Company Covered Members	XYZ Covered Members
Low	0.44	10,000	150
Medium	1.21	8,000	120
High	6.47	1,500	15

- XYZ does not have access to its own experience prior to its divestiture.

(c) (2 points)

- (i) Calculate XYZ's risk factor adjustment to apply to claims. Show your work.
- (ii) Interpret the results for management.

3. (8 points)

- (a) (1 point) List financial performance metrics for Pharmacy Benefit Managers (PBMs).
- (b) (2 points) Compare and contrast a PBM's role when providing prescription drug benefits:
 - (i) Through a health plan
 - (ii) Directly to plan sponsors (carved-out benefits)

Company DEF provides self-insured prescription drug coverage to its 1,000 employees. DEF is evaluating its prescription drug coverage.

You are given DEF's prescription drug utilization data from last year:

	Scripts/1,000 members per year	Average Allowed Amount per script
Generic - Retail	4,000	\$30
Generic – Mail Order	200	\$70
Brand – Retail – Formulary	400	\$300
Brand – Retail – Non-Formulary	150	\$430
Brand- Mail Order-Formulary	270	\$750
Brand – Mail Order – Non-Formulary	300	\$1,200

3. Continued

DEF plans to implement a new prescription drug management program that is expected to shift 5% of brand formulary drug utilization to generics. You are given:

- The program will cost \$12,000 per year.
 - DEF receives rebates equal to 10% of the allowed amount for formulary brand drugs.
 - Utilization and unit cost trends are 0% annually.
 - There will be no change in the covered membership.
- (c) (*4 points*) Calculate the impact of the program on DEF's prescription drug spending. Show your work.
- (d) (*1 point*) Recommend whether or not DEF should implement the program. Justify your response.

4. (10 points)

- (a) (2 points) State the basic formula and describe the variables for assigning credibility for group medical by size of group.

You are given:

- $K_1 = 0.25$
- $K_2 = K_3 = 0.01$

- (b) (1 point) Calculate the credibility for the following group sizes:

- 10
- 100
- 1000

Show your work.

- (c) (1 point) Describe the adjustments to the basic formula for turnover of employees.

- (d) (1 point) Calculate the credibility for a 10 member group using the following values for p :

- 70%
- 80%
- 90%

Show your work.

- (e) (1 point) Describe limits on individual claims amounts that may be utilized in assigning credibility.

- (f) (1 point) Describe specific stop loss arrangements that may be utilized in assigning credibility.

- (g) (1 point) State the basic formula for stop loss credibility

- (h) (2 points) Describe the impact of utilizing different time periods for assigning credibility. Include applicable formulas.

5. (7 points)

- (a) (1 point) Describe issues insurers need to consider when deciding to offer Level-Funded Products (LFPs).

You are the actuary for a small employer that is considering an LFP.

- (b) (3 points) Create a chart that provides the following:

Advantages of Self-Funding for the Employer	Applicability to LFP	Justification for Applicability
...
Disadvantages of Self-Funding for the Employer	Applicability to LFP	Justification for Applicability
...

You are given:

Specific Deductible	\$20,000
Aggregate Stop Loss Corridor	125%
Expected Claim Cost Per Member Per Month (PMPM)	\$192.65
Expected Reimbursement PMPM Under Specific Stop Loss (SSL)	\$21.49

- (c) (1 point) Calculate the maximum liability PMPM for the group. Show your work.

Assume the group's specific stop loss experience occurs as expected.

- (d) (1 point) Calculate the paid claims surplus PMPM for the group assuming:

- (i) Total PMPM claim costs are 15% higher than expected
- (ii) Total PMPM claim costs are 35% higher than expected

Show your work.

- (e) (1 point) Recommend whether or not to purchase the LFP. Justify your answer.

6. (6 points)

- (a) (1 point) List sources of change in chronic population risk-mix in Disease Management (DM) programs.
- (b) (2 points) Describe how adjusting for changes in the population risk-mix can impact the evaluation of DM program savings.

You are given:

Risk Status	Baseline Year		Risk Status Transition Probability			Intervention Year
	Prevalence	Baseline Period Cost (Per Member Per Year)	Transition to High	Transition to Moderate	Transition to Low	Intervention Period Cost (Per Member Per Year)
High	10%	\$35,000	30%	40%	30%	\$40,000
Moderate	30%	\$10,000	8%	40%	52%	\$10,800
Low	60%	\$5,000	6%	30%	64%	\$5,350

- Annual cost trend: 11%.

- (c) (3 points) Calculate the DM program savings. Show your work.

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7. (9 points) You are the valuation actuary for a company that sells individual Long Term Care (LTC).

The CFO has decided to implement a 2 year preliminary term policy reserve on new LTC policies.

- (a) (1 point) Explain:
- (i) when policy reserves are needed
 - (ii) why a company would implement a preliminary term reserve
- (b) (1 point) Explain the major differences between how statutory accounting and GAAP accounting reflect expenses in policy reserves.

You are given the following information:

Year (t)	Persistence to Year (t)	Annual Claims
0	1.0000	0.00
1	0.6498	92.28
2	0.4482	116.51
3	0.3316	136.70

- Interest rate = 0%
- Premiums are paid at the beginning of the year
- Claims are incurred at the end of the year

- (c) (6 points)
- (i) Construct a chart of the reserve stream under prospective and retrospective reserve methods:
- Per original policy
 - Per in force policy
- Show your work.
- (ii) Explain why the reserve streams differ.

7. Continued

The CFO is considering implementing a two-year preliminary term reserve on LTC products sold 5 years ago.

(d) *(1 point)*

- (i) Describe the minimum valuation standards for LTC preliminary term on a policy reserve.
- (ii) Recommend an alternative to the CFO. Justify your response.

8. (4 points) You are an actuary working for XYZ Insurance Company. XYZ offers various products, such as small group ACA, small group transitional, and Level Funding.

(a) (1 point) Describe the need for health risk adjustment.

You are given the following about small groups A and B for 2017:

Per Member Per Month (PMPM)	Company A	Company B
Level Funding Premium	\$ 291.33	\$ 862.10
Small Group ACA Base Premium Rate	\$ 386.54	\$ 386.54
Small Group Transitional Base Net Premium Rate	\$ 280.50	\$ 280.50
Small Group Transitional Administrative Expenses	\$ 60.12	\$ 90.60

Adjustment Factors	Company A	Company B
Age	0.96	1.65
Gender	0.86	1.15
Industry	0.90	1.10
Area	1.02	1.05

(b) (2 points) Calculate the premiums for each company for:

- (i) Small group transitional
- (ii) Small group ACA

Show your work.

Assume:

- The transitional period will expire in 2019.
- The 2017 premiums are the same in 2019.

(c) (1 point) Recommend which product XYZ should offer to each company. Justify your answer.

9. (5 points)

- (a) (2 points) Describe types of care management programs and interventions.
- (b) (1 point) Describe common features of care management programs.

You are given:

	Care Management Program 1	Care Management Program 2
Number of Health Plan Members	10,000	10,000
Number of Chronic Members	200	500
Annual Program Cost	\$100,000	\$300,000
Annual Gross Savings	\$300,000	\$700,000

- (c) (2 points)
 - (i) Evaluate the economics of the two care management programs. Show your work.
 - (ii) Identify which program provides more economic value. Justify your answer.

****END OF EXAMINATION****
Morning Session

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