
SOCIETY OF ACTUARIES
Group and Health – Advanced

Exam GHADV

MORNING SESSION

Date: Thursday, October 31, 2013

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 12 questions numbered 1 through 12.
 - b) The afternoon session consists of 8 questions numbered 13 through 20.

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 since 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****
Morning Session

- 1.** (3 points) Your company is considering implementing a care management initiative and you have been asked to evaluate which intervention would provide the best return for your company.
- (a) (1 point) Describe the factors that complicate the evaluation and comparison of the financial savings literature.
 - (b) (1 point) List and describe the methodology for a literature review.
 - (c) (1 point) Describe how you would discriminate amongst articles you select for inclusion in your literature review.

2. (4 points) You are a consulting actuary and have been asked to evaluate your client's disease management (DM) program. This program was implemented in 2012. There were no DM programs prior to 2012.

- (a) (1 point) List the measurement issues specific to chronic populations.
- (b) (1 point) List the operational measures that should be reported for any DM program.

You are given:

	Chronic	Non-chronic	Total
Full Year 2011 Member Months	2,000	3,500	5,500
Full Year 2011 Total Claim Cost	\$33,880,000	\$35,700,000	\$56,580,000
Full Year 2011 Risk Score	1.500	0.940	1.144
Full Year 2012 Member Months	2,000	3,500	5,500
Full Year 2012 Total Claim Cost	\$34,520,000	\$36,560,000	\$67,080,000
Full Year 2012 Risk Score	1.520	0.920	1.138

- (c) (1 point) Calculate the 2012 risk-adjusted trend for the following. Show your work.
 - (i) Chronic population
 - (ii) Non-chronic population
- (d) (1 point) Calculate the risk adjusted savings for the DM Program. Show your work.

3. (4 points) You are the actuary responsible for monitoring and providing guidance to the actuaries at your consulting firm to help ensure that they are able to meet the qualification standards to issue statements of actuarial opinion (SAO) in the United States.

- (a) (1 point) Describe briefly the basic and education requirements needed to sign SAOs.
- (b) (1 point) Describe briefly the continuing education requirements needed to sign general SAOs.

You are given the following:

Continuing Education Documentation for one actuary

Date	Education Hours	Specific / General	Organized	Professionalism	Business Skills
1/1/2011	3	General	Y	Y	N
2/1/2011	8	Specific	N	N	N
3/1/2011	8	Specific	Y	N	N
4/1/2011	5	Specific	N	N	Y
5/1/2011	2	General	N	N	N
6/1/2011	4	General	N	N	N
2/1/2012	4	General	N	N	N
5/1/2012	8	Specific	Y	N	N
7/1/2012	3	Specific	N	N	N
9/1/2012	8	General	N	N	N
10/1/2012	8	General	N	N	N
10/1/2012	5	General	N	Y	N

- (c) (2 points) Determine whether the documented continuing education meets the qualification standards to sign an annual statement SAO in 2012. Show all work.

4. (5 points) You work in the valuation department of Cute Puppy Insurance Company (CPIC), a large multi-line carrier. Your area of responsibility is a small block of Disability Income (DI) insurance.

You are given the following:

Continuance Table			
Claim Duration (in months)	Age at Claim		
	35	45	55
0	1,000	1,000	1,000
1	900	950	975
2	800	900	950
3	700	850	925
4	600	800	900
5	500	750	875
6	400	700	850
7	300	650	825

Interest rate is 5%

- (a) (2 points) Calculate the tabular claim reserves at the end of the 3rd month of disability for a 45 year-old claimant who has a policy with a 3 month elimination period, a 3 month benefit period, and a flat monthly benefit of \$2000. Show your work.
- (b) (1 point) Explain ways to increase the margin on your block of claim reserves.
- (c) (2 points) Describe these methods and explain their appropriateness in estimating claim reserves for disabled lives.
- (i) Lag method
 - (ii) Loss ratio method
 - (iii) Average claim size.

5. (6 points) You are the president of A Better Claim (ABC), a rapidly expanding Third Party Administrator (TPA).

(a) (1 point) Describe the role of TPAs in providing major medical health benefits.

(b) (2 points) List and describe the functions a Member Services Organization (MSO) performs.

(c) (3 points) Provide reasons that would help you justify why the following prospects should contract with ABC:

(i) A large national employer providing self-funded medical benefits to its employees and their dependents.

(ii) A new Managed Care Organization (MCO) that will issue health insurance policies.

6. (4 points) You are an actuary for Ghostly Ghouls Consultants, a firm specializing in pricing and regulations affecting individual and small employer group business. You recently completed a study on modeling anti-selective lapses and optimizing pricing for these markets.

(a) (1 point) Explain challenges an actuary faces in determining an optimal rate increase in these markets.

(b) (1 point)

(i) Explain the concept of a sustainable block.

(ii) List strategies insurers can employ to increase profit capacity.

(c) (1 point) Outline recommended rules for optimizing pricing in this market.

For a particular insured individual, you are given:

- Premium rate = \$1,080
- Cost of switching = 12.0% of premium
- Quality of the current enrolled product commands an extra 7.5% of premium
- The market price for the product is \$897.

(d) (1 point) Determine if this insured will switch. Show your work. Justify your answer.

7. (8 points) You are the chief actuary at One Ton Truck Insurance Company (OTTIC). OTTIC offers health insurance plans to the individual and small employer group market. OTTIC's President has asked you to review how specific aspects of the Affordable Care Act (ACA) affect their products and operations.
- (a) (1 point) Identify the essential health benefit categories for qualified health plans under the ACA.
 - (b) (1 point) List the conditions under which a grandfathered plan will lose its grandfathered status under the ACA.
 - (c) (1 point) List the pre-2014 ACA provisions that a grandfathered plan must comply with.
 - (d) (2 points) Compare and contrast the small group health option program (SHOP) exchanges and the Individual exchanges.
 - (e) (3 points) Explain how the ACA legislation impacts OTTIC's:
 - (i) Operations
 - (ii) Sales and marketing

8. (8 points) You are the valuation actuary responsible for a 3 year term disability product.

Below are the key assumptions:

Premium is \$1,000 per year for 3 year term, payable at beginning of year.

Interest rate = 0%

Year	Lapse Rate	Commission Rate	Acquisition Costs	Maintenance Costs	GAAP Reserves	STAT Reserves	Expected Claims per thousand dollars of Premium
1	30%	75%	25%	10%	283	0	\$200.00
2	20%	15%	0%	10%	316	0	\$428.57
3	10%	5%	0%	10%	0	0	\$714.29

- (a) (1 point) Explain Deferred Acquisition Costs (DAC).
- (b) (3 points) Calculate the maximum allowable DAC balance at the end of year 1, year 2 and year 3. Show your work.
- (c) (3 points) Develop a 3 year projection of profit using GAAP and Statutory accounting for each of the following scenarios. Show your work.
- (i) Your company establishes the maximum allowable DAC.
 - (ii) Your company does NOT establish a DAC.
- (d) (1 point) Recommend whether to set up a DAC. Justify your answer.

- 9.** (4 points) You are a newly hired staff actuary working for the state auditing department to review 2014 statements of actuarial opinions for health insurers' financial statements. You were given the responsibility of working on the financial statements for all insurers who elected to participate in the health insurance exchange. You want to set expectations early with your Responding Actuaries. You also would like to establish a good, professional working relationship with these actuaries.

Outline the content of your first correspondence to Responding Actuaries, which will also kick off the auditing process. Be specific in items requested. Make sure you consider standards of practice by which you and they must comply as you outline the content of this first communication.

- 10.** (4 points) You are the valuation actuary for a Critical Illness (CI) Insurance block. The CI policies are 5 year term policies. You are tasked with determining if the reserves are adequate for the block.

Assume that the projected premium and claim payments for the next 5 years are as depicted in the chart below.

Year	Expected Benefit	Expected Premium
2013	175,000	250,000
2014	176,000	227,000
2015	177,000	206,000
2016	178,000	187,000
2017	179,000	170,000
2018	13,000	0

Assume the following:

- Commissions are 7% of premium.
- Claims Expenses are 5% of claims.
- Taxes are 2% of premium.
- All other expenses come to 7% of premium.
- Interest Rate = 0%

The 12/31/2012 IBNR for the block is \$15,000

The 12/31/2012 Policy reserve for the block is \$85,000

The Deferred Acquisition Cost (DAC) asset as of 12/31/2012 is \$20,000.

- (a) (3 points) Determine if the reserves are adequate for the block as of 12/31/2012. Show your work.
- (b) (1 point) Describe the impact of a changing interest rate environment on the adequacy of reserves.

11. (5 points) You are an actuary that has been hired to help a provider organization establish a Center for Medicare and Medicaid Services (CMS) Accountable Care Organization (ACO) in 2013.

- (a) (1 point) Describe the method that will be used to attribute beneficiaries to the ACO for purposes of determining benchmarks.
- (b) (1 point) Describe how quality performance will be assessed and how it will impact the ACO's shared savings arrangement.

The ACO would like to know whether an upside only or two-sided shared savings approach would be most beneficial.

You are given the following:

Year	Benchmark Claim (PMPM)
2013	\$270
2014	\$306
2015	\$342
2016	\$350

Key Assumptions:

- Number of Enrollees: 60,000
- 2012 Medical Claim PMPM: \$255
- Annual Trend: 9.0%
- No changes to future enrollment.

- (c) (3 points) Recommend which shared savings approach the ACO should pursue. Show your work.

12. (5 points)

- (a) (2 points) Describe environmental factors impacting pharmacy program management.
- (b) (1 point) List services typically provided by Pharmacy Benefit Managers (PBM).
- (c) (2 points) Describe various methods PBMs can use to control or reduce pharmacy costs.

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

USE THIS PAGE FOR YOUR SCRATCH WORK

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