
SOCIETY OF ACTUARIES
Group and Health – Design & Pricing

Exam DP-GH

MORNING SESSION

Date: Thursday, November 1, 2012

Time: 8:30 a.m. – 11:45 a.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 120 points. It consists of a morning session (worth 60 points) and an afternoon session (worth 60 points).
 - a) The morning session consists of 7 questions numbered 1 through 7.
 - b) The afternoon session consists of 7 questions numbered 8 through 14.

The points for each question are indicated at the beginning of the question. Questions 3 - 6 pertain to the Case Study, which is enclosed inside the front cover of this exam booklet.

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 DP-GH.
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.

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****
MORNING SESSION

1. (4 points) You are a consulting actuary for the State of Bliss retained to advise about program design and targeted cost savings for its employee health plan. Employees have an average tenure of 15 years.

(a) (1 point) Describe how states have responded to the increased pressure to reduce costs of health care.

The state conducted a small pilot study to cover bariatric surgery for obese and morbidly obese members to investigate if there would be cost savings.

The member distribution of the whole plan and the study group by weight category are as follows:

	Total Plan	Study Plan
Not Obese	34,560	120
Obese	9,000	50
Morbidly Obese	<u>4,440</u>	<u>30</u>
	48,000	200

After three years the sample group shows a 12% savings in medical costs.

(b) (2 points)

- (i) Describe the concerns with obesity in the United States.
- (ii) Describe how obesity is measured.
- (iii) Compare the expected medical costs of those who are not obese to those who are obese and those who are morbidly obese.
- (iv) List the diagnoses (comorbidities) which accompany obesity.
- (v) List the types of surgeries available for the morbidly obese.

(c) (1 point) Describe how the pilot study results should be adjusted to project the expected savings for the whole group.

2. (8 points) You have been retained by Bearde & Whiskers, Inc. (B&W), a large U.S. accounting firm, to help them set up a new employee benefit plan featuring a self-funded consumer-driven health plan (CDHP).

B&W's VP of HR wants to use the functional approach to employee benefits in setting up the new plan.

You are given the following experience information for B&W's current health plan.

Range of Annual Total Allowed Cost per Member	% of Members	Average Annual Benefit Cost to Plan (After Cost Sharing) per Member	Effective Coinsurance for Members
\$0	15%	\$0	N/A
\$1 - \$1,000	25%	\$370	37%
\$1,001 - \$2,000	40%	\$1,420	22%
\$2,001 - \$3,000	12%	\$2,530	13%
\$3,001 - \$5,000	6%	\$3,980	11%
\$5,001 +	2%	\$8,720	5%

The new CDHP being proposed for B&W will have a \$2,000 annual deductible per member, with 100% coverage for all costs above the deductible. All members in the B&W group will also receive an HSA account with \$1,000 deposited by B&W annually to spend on health benefits.

- (2 points) Describe the steps required to apply the functional approach to evaluate employee benefits.
- (4 points) Calculate the difference in annual cost per member for funding the new CDHP versus the original plan. Assume no trend or other adjustments to the data provided. Show your work.
- (1 point) Explain how the data should be adjusted when calculating costs under the CDHP plan.
- (1 point) Describe the potential impact of CDHPs on member behavior and member health.

Question 3 pertains to the Case Study.
Each question should be answered independently.

3. (10 points) Joseph Bagstock followed up regarding the acute inpatient readmissions for Dombey and Sons' retiree Medicare Advantage (MA) plan.

(a) You are given:

- National Average Readmission Rate = 19.1%
- DRG Indices

DRG	DRG Index
1	17%
2	23%
3	13%
4	8%
5	24%
6	21%
7	9%
8	19%
9	26%
10	25%

- (i) (5 points) Calculate the Expected Readmission Rate. Show your work.
 - (ii) (2 points) Calculate the Star Rating for IP acute readmissions. Show your work.
 - (iii) (1 point) Explain the potential implications of the calculated Star Rating.
- (b) Dombey desires to reduce its IP acute readmission rate.
- (i) (1 point) List the advantages of a reduced readmission rate.
 - (ii) (1 point) List ways IP readmissions could be reduced.

Question 4 pertains to the Case Study.
Each question should be answered independently.

- 4.** (7 points) Management at GEIC would like to have a higher employee participation rate in the wellness program among their 5,000 employees. To achieve this, they want to consider offering a \$200 credit towards the purchase of health coverage to those who participate in the program.

You have the recommendation report which was based on assumptions from Wilkins Macawber's memo (Memo 1). Total Medical Care Savings for the year were estimated to be \$270,000 prior to the consideration of program costs of \$30 per participant per month.

A \$200 incentive would change the Program Uptake and Medical Care Savings assumptions in Macawber's memo. The table below reflects the new assumptions.

	Program Uptake	Medical Care Savings Estimate
Chronically Ill	30%	6%
Unhealthy Habits	35%	13%
Mean Well	20%	10%
Vigorously Healthy	25%	1%

- (a) (1 point) List elements typically included in a corporate wellness program.
- (b) (5 points) Calculate the new estimated medical care cost savings. Show your work.
- (c) (1 point) Determine whether the expected medical care cost savings will be sufficient to pay for the program. Show your work.

Question 5 pertains to the Case Study.
Each question should be answered independently.

- 5.** (15 points) Wackford Squeers has followed up to e-mail 18 and e-mail 19 regarding the potential 2013 POS plan offering.

You are given:

Service Category	% Utilization Out-of-Network
Part A	
Hospital	10%
Skilled Nursing Facility	10%
Home Health	10%
Part B	
Ambulance	25%
Medical Equipment/Supplies	30%
Outpatient - Emergency	15%
Outpatient - Surgery	15%
Outpatient - Lab	15%
Physician - Primary Care	10%
Physician - Specialist	10%
Preventive Services	10%

- (a) (1 point) List options that Medicare eligibles have for insurance coverage.
- (b) (2 points) Describe key features of HMO, POS, and PPO plans.
- (c) (2 points) Calculate the overall effective allowed cost trend using the historical HMO experience table as a starting point. Show your work.
- (d) (8 points) Calculate the projected proportion of member cost sharing that is out-of-network in 2013, assuming in and out of network unit prices are the same. Show your work.
- (e) (2 points) Calculate the PMPM revenue required for the POS plan in 2013. Show your work.

***Question 6 pertains to the Case Study.
Each question should be answered independently.***

- 6.** (9 points) Dombey and Sons, Inc. is currently reviewing a medical plan proposal from Roger Cly, sales representative for Great Expectations.

You are given:

- 4.9% annual allowed trend
 - Target loss ratio of 80%
 - Effective date January 1, 2013
 - All claims are subject to deductible
 - The plan is employee-pay-all except for the HSA contribution
 - Dombey is considering adding an additional plan option for 2013
 - \$2400 deductible
 - No coinsurance
 - \$600 employer contribution
 - Employee product selection decisions are based on lowest total employee costs (premium plus cost sharing)
- (a) (2 points) Calculate the January 1, 2013 rate increase assuming no additional plan options. Show your work.
- (b) (1 point) Describe how adverse selection may result from the inclusion of the additional plan option.
- (c) (4 points) Calculate the aggregate annual revenue needed taking into consideration adverse selection. Use 2011 experience and assume no trend. Show your work.
- (d) (2 points) Describe pricing or plan design options that Roger Cly could present to the group to address the impact of adverse selection.

7. (7 points) You are a consulting actuary for WEIRD Co., a company that offers a retiree medical benefit plan. To be eligible for retiree medical benefits an employee needs to be at least 55 years of age with 5 years of service with the company. The plan is unfunded, and the VP of Finance is complaining about the growing retiree medical benefit liability.
- (a) (3 points) The VP of HR needs assistance in understanding options for funding retiree benefits.
 - (i) Describe the characteristics of an ideal funding vehicle.
 - (ii) Describe investment vehicles that can be used to fund retiree benefits and state if each vehicle meets each ideal characteristic.
 - (b) (1 point) Explain various actions WEIRD can take to reduce the plan cost.
 - (c) (2 points) The VP of Finance wants to eliminate this benefit entirely in the next financial quarter. Criticize this proposal and suggest an alternative.
 - (d) (1 point) Describe the impact on retirees of not having group retiree medical coverage.

****END OF EXAMINATION****
MORNING SESSION

USE THIS PAGE FOR YOUR SCRATCH WORK

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