

GH CORU Model Solutions

Fall 2017

1. Learning Objectives:

4. The candidate will understand how to describe Government Programs providing Health and Disability Benefits in the U.S.

Learning Outcomes:

- (4b) Describe benefits and eligibility requirements for Social Security, including disability income.

Sources:

Essentials of Managed Health Care, Kongstvedt, 6th Edition, 2013 – Chapter 24

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Describe each type of SNP and the circumstances under which each can be offered.

Commentary on Question:

The majority of candidates successfully listed and described the three types of Special Needs Plans

- Institutional SNP – for beneficiaries that are confined to a facility. In certain cases, beneficiaries that are in the community but are eligible to be admitted to a facility may also qualify
- Chronic SNP – for beneficiaries with certain chronic conditions e.g. diabetes, cancer etc
- Dual SNP – for beneficiaries that are eligible for both Medicare and Medicaid

(b)

- (i) Calculate the 2018 revenue PMPM that this plan should expect to receive from CMS for its projected population. Show your work.
- (ii) Calculate the 2018 monthly beneficiary premium for this plan. Show your work.

1. Continued

Commentary on Question:

Most candidates recognized the need to trend 2016 claims forward using both the unit cost and utilization trends; however, a common mistake amongst candidates was including the supplemental benefits in the bid calculation. When doing this, savings and rebate calculations could not be done correctly. Some candidates solved for the savings and rebate for each county separately instead of calculation the weighted average benchmark – if candidates did this correctly and the membership-weighted the answers together at the end, they were still awarded full credit for that portion of the desired answer.

When it comes to calculating the member premium in part (ii), most candidates correctly calculated the total cost of supplemental benefits and applied the rebate to covering portion of those costs, as described; however, if they had incorrectly calculated the rebate in part (i), then they were unable to arrive at the correct member premium. Candidates who went about solving for this in a different manner (total expected benefits – CMS revenue) were given full credit if each piece was correctly calculated.

Part (i)

Step 1: Trend Parts A and B costs two years forward to calculate the “bid amount”

For example, Inpatient Hospital = $300 * (1+2\%)^2 * (1-1\%)^2 = \305.91

Projected Part A benefits = \$409.95

Projected Part B benefits = \$382.05

Bid amount = \$792.00

Step 2: Calculate benchmark as a weighted average of the county benchmarks

Weighted average benchmark = $(12,500 * 800 + 15,000 * 900) / (12,500 + 15,000) = \854.55

Step 3: Calculate plan savings and rebate

Savings = $\$854.55 - \$792.00 = \$62.55$

Rebate = $0.7 * \$62.55 = \43.79

Step 4: Calculate total CMS revenue

CMS revenue = Bid amount + Rebate = $\$792.00 + \$43.79 = \$835.79$ PMPM

Part (ii)

Step 1: Since CMS isn't responsible for supplementary benefits, start by projecting these costs forward

Projected supplemental benefits = \$72.84

Step 2: Use the plan's rebate to reduce supplemental benefits

Adjusted supplemental benefits = $\$72.84 - \$43.79 = \$29.05$ = Monthly premium due by member

2. Learning Objectives:

6. Evaluate the impact of regulation and taxation on companies and plan sponsors in the U.S.

Learning Outcomes:

- (6a) Describe the regulatory and policy making process in the U.S.
- (6b) Describe the major applicable laws and regulations and evaluate their impact.
- (6c) Apply applicable standards of practice.

Sources:

GHC-815-16: Kaiser Foundation: Examining Health Care Reform: Medical Loss Ratio, ASOPs

Commentary on Question:

This question was intended to test the candidates' knowledge of the ACA's MLR – the regulations around it, how to calculate it, and what the MLR means to a plan. This question also tested the ASOPs related to rate filings.

Solution:

- (a) Describe the regulations that apply to insurance companies as they relate to medical loss ratios (MLR) and the justification for each regulation.

Commentary on Question:

Many candidates did well on this part of the question, answering restrictions that the ACA place on the MLR.

- MLR Formula: ACA MLR: $(\text{Health care claims} + \text{Quality Imp Expenses}) / (\text{Premiums} - \text{Tax, Licensing Fees, and Regulatory Fees})$
 - MLR: Small Group Fully Insured 80%
 - MLR: Individual 80%
 - MLR: Large Group Fully Insured: 85%
 - MLR: Self-Funded: None
 - Purpose:
 - Limits the portion of premium dollars health insurers may spend on admin, marketing, and profits.
 - Insurers must publicly report the portion of premium dollars spent on health care and quality imp.
 - Insurers failing to meet the MLR standards must pay rebates to consumers beginning in 2012.
- (b) List the ASOPs that you should consider when developing the rate filings and describe the reasons why each is relevant.

2. Continued

Commentary on Question:

Some candidates did not show the relevance of the ASOPs (some listed the ASOP but didn't talk about relevance). Marks were given if relevance was applicable (not limited to exact wording below).

- ASOP 8: Regulatory Filings for Health Plan Entities
 - Relevance: ASOP gives guidance for an actuary preparing or reviewing regulatory filings for health plan entities.
- ASOP 23: Data quality
 - Relevance: Gives guidance in selecting data that underlies the actuarial work product, relying on data supplied by others, reviewing, using, and making disclosures on data quality.
- ASOP 26: Small employer health plan benefits
 - Relevance: Applies to actuarial certifications of compliance prescribed by regulatory requirements that a carrier's rating methods and other actuarial practices applicable to small employer health benefit plans comply with statutory and regulatory rating constraints.
- ASOP 41: Communications
 - Relevance: Gives guidance in actuarial communications (including rate filing communications).

- (c) Calculate Quantum Health Insurance Company's Affordable Care Act (ACA) 2014 MLR prior to the credibility adjustment. Assume Quantum had \$300,000 of quality improvement and fraud reduction expenses. Show your work.

Commentary on Question:

Some candidates were unable to recognize that Legacy would still be included in the MLR and that the Small group and Individual were calculated separately (1 Individual and 1 Small Group MLR required to receive full credit). Some candidates were also unable to find taxes / fees from the exhibits in the case study. Generally, if candidates stated a reasonable assumption for dividing taxes / quality improvement between the two MLR calculations, full marks was given for that portion of the question.

ACA MLR: (Health care claims + Quality Imp Expenses) / (Premiums – Taxes, Licensing Fees, and Regulatory Fees)

- Individual ACA MLR (#'s in 1,000's):
 - $(40,872 + 300 * \% \text{ of Premium}=56\%) / (47,823 - (1,703+2,568) * 56\%)$
 - = 90.3%
- Small Group ACA MLR (#'s in 1,000's):
 - $(30,983 + 300 * \% \text{ of Premium}=44\%) / (37,305 - (4,271) * 44\%)$
 - = 87.8%

2. Continued

- (d) Describe plan consequences of an ACA MLR calculation.

Commentary on Question:

Very few candidates were able to answer both sides of the MLR. Many candidates answered that if the ACA loss ratio was less than the minimum MLR then a rebate would be paid, however they missed the flip side in that if the MLR is too high they could have priced the plan higher.

- If MLR is $>$ Required minimum MLR - Rating Changes; should have charged higher amount of premium for policies, increase rates
- If MLR is $<$ Required minimum MLR - Have to pay a rebate back to enrollees

3. Learning Objectives:

5. The candidate will understand how to prepare and interpret insurance company financial statements in accordance with U.S. Statutory Principles and GAAP.

Learning Outcomes:

- (5a) Prepare a financial statement in accordance with generally accepted accounting principles.
- (5b) Interpret the results of both statutory and GAAP statements from the viewpoint of various stakeholders, including regulators, senior management, investors.

Sources:

Skwire Ch. 41

Commentary on Question:

Candidates did well overall on parts a and b of this question. For part c, candidates that were able to recall this section of the reading and explain the main concept were awarded full credit.

Solution:

- (a) Evaluate the relative financial positions of Royale Life and Quantum Health using same-size-income statements. Show your work.

Commentary on Question:

Candidates that only wrote the percentages still received full credit. In addition, using 2014 Quantum data and 2013 Royale data could be justified as being the most recent data available, though the years did not align. Finally, full credit was awarded for using Operating Revenue as the divisor (including or excluding investment income).

3. Continued

	Quantum 2013		Royale 2013	
	\$	%	\$	%
Premium	\$53,032	96.1%	\$66,599	91.5%
<i>Other Revenue</i>	\$1,083	2.0%	\$5,095	7.0%
Admin Fees	\$22	0.0%	\$5,050	6.9%
Misc. Income	\$1,061	1.9%	\$45	0.1%
Operating Revenue	\$54,115	98.0%	\$71,694	98.5%
Investment Income	\$1,079	2.0%	\$1,070	1.5%
Total Revenue	\$55,194	100.0%	\$72,764	100.0%
Benefit Expense	\$43,401	78.6%	\$57,230	78.7%
<i>Admin Expense</i>	\$8,174	14.8%	\$13,169	18.1%
Commissions	\$757	1.4%	\$1,541	2.1%
General Expense	\$5,780	10.5%	\$9,246	12.7%
Insurance Tax/Fees	\$1,061	1.9%	\$2,382	3.3%
Write-in	\$576	1.0%	\$0	0.0%
Total Expense	\$51,575	93.4%	\$70,399	96.7%
EBIT	\$3,619	6.6%	\$2,365	3.3%
IT	\$1,230	2.2%	\$1,251	1.7%
Net Income	\$2,389	4.3%	\$1,114	1.5%

Evaluation:

Royale had more total revenue than Quantum
 Quantum had a lower admin expense ratio than Royale
 Quantum had a lower total expense ratio than Royale
 Quantum had a greater operating profit ratio than Royale
 Quantum had a greater profit level than Royale

- (b) Identify the common adjustments for revenue reporting used to normalize differences between same-size-income statements.

Commentary on Question:

Candidates were awarded credit for listing the following adjustments. The full explanation was not required for full credit.

- Reinsurance: some include this as revenue as offsets to health care costs. Helpful when including very large health plans in the comparisons that do not often include reinsurance.

3. Continued

- Commissions: An expense of health plan except under certain circumstances. Considered an admin expense, and revenues should include such commissions.
- Investment income: Sometimes, investment income is included in operating revenue but there are reasons why excluding investment income from revenues is more useful and analytical.
- Administrative Services Only Products: for products that have the sponsor absorbing health costs, you may express administrative costs as a percent of "premium equivalents" by adding health benefits to the fee revenue.

(c)

- (i) List the limitations in using same-size-income statements.
- (ii) Describe the primary approach insurers use to address these limitations.

(i)

Commentary on Question:

Candidates that were able to recall material from this section of the readings received full credit. However, candidates received some credits by listing reasonable limitations from their general knowledge or understanding of same size income statements (no point was given for “competitive pressures of health plan pricing”).

- There are issues with reporting on a percent of revenue.
- Competitive pressures on health plan pricing can affect same size income statements.
- Using same-size income statements presents challenges managing actual business operations.

(ii)

Commentary on Question:

Performance on this subpart was contingent on the answer in part (c)(i). Many candidates mentioned solutions based on experience and general knowledge and were able to arrive at the PMPM idea, thusly receiving credit.

- The traditional solution for analysts is to divide each of the expense items by the membership to which the expenses apply, rather than revenues. Corresponding with how health plans bill for insurance, the cost attributes are standardized in PMPM units.

4. Learning Objectives:

6. Evaluate the impact of regulation and taxation on companies and plan sponsors in the U.S.

Learning Outcomes:

- (6b) Describe the major applicable laws and regulations and evaluate their impact.

Sources:

GHC-806-15: Financial Reporting Implications Under the Affordable Care Act

GHC-810-15: Risk Transfer Formula for Individual and Small Group Markets Under the Affordable Care Act (pages E3-E16)

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Calculate the final 2016 transfer for ABC. Show your work.

Commentary on Question:

Candidates generally performed well on this portion of the question. The most common mistake on this question was to blend the market factor with factors for ABC. Market factors include all carriers in the market.

Company ABC Transfer:

PLRS x IDF x GCF	2.0034	2.0000
Market PLRS x IDF x GCF	2.0196	2.0200
Normalized:	0.9920	0.9901
AV x ARF x IDF x GCF	0.8254	0.8300
Market AV x ARF x IDF x GCF	0.8003	0.8000
Normalized:	1.0314	1.0375

Estimated Transfer = Market Average Premium * Billable Member Months * [(a)/(b) - (c)/(d)]

Estimated Transfer: (878,193)

- (b) Write a memo to your manager explaining the differences between the final risk transfer and what would have been calculated as an interim estimate as of 11/30/2016. Show your work.

4. Continued

Commentary on Question:

Many candidates did not account for the interim data being through November. Candidates compared a year to date number to a November estimate, which is not appropriate. Induced demand was not included in the question. Candidates were given credit if they use the final induced demand factor, assumed the market induced demand (1.0) or if they interpolated based on the actuarial value stated in the question. Some candidates neglected to provide their response in a memo format.

Company ABC Transfer:

PLRS x IDF x GCF	1.9478	(a)
Market PLRS x IDF x GCF	1.8144	(b)
Normalized:	1.0735	(a) / (b)
AV x ARF x IDF x GCF	0.8254	(c)
Market AV x ARF x IDF x GCF	0.8003	(d)
Normalized:	1.0314	(c) / (d)

Estimated Transfer = Market Average Premium * Billable Member Months* 12/11* [(a)/(b) - (c)/(d)]

Estimated Transfer: 958,492

- In the memo, the candidate needed to state the November and final December risk transfer amounts

- The candidate needed to describe factors that contributed to the change in risk transfer, which include:

(A) The key change was the shift in plan liability risk scores from November to December, where ABC's PLRS increased slower than the market (3% vs. 11%). As a result, our risk score went from being higher than the market in November, to lower than the market in December. Because the risk transfer is estimated based on the plan's risk relative to the market average, we went from estimating ABC would receive a payment from the market in November, to needing to make a payment in December.

(B) the market premium increased, which increases the magnitude of the transfer

(C) annualized billed membership decreased, which would decrease the magnitude of the transfer

4. Continued

- (c) ABC updated their 5-year pro forma forecast based on year end results.

Describe the impact of the final results to financial planning.

Commentary on Question:

Candidates didn't do well on part (c). Candidates must illustrate an understanding that forecasts based on interim estimates must be updated to reflect revisions to base experience in the forecast. The text speaks to this as “it is important to measure sales as accurately as possible”. This is a general concept that should be understood, and less of a retrievable bullet point from the text.

- Baseline experience will have to be restated
- Management may need to reconsider the external funding needed
- Forecasters should re-evaluate their assumptions
- New sensitivity analysis may be required
- Other activities expressed in this section of the reading (Description of impact to forecast should not repeat part b and does not require calculations.)

5. Learning Objectives:

4. The candidate will understand how to describe Government Programs providing Health and Disability Benefits in the U.S.

Learning Outcomes:

- (4c) Describe benefits and eligibility requirements for Medicaid and Children's Health Insurance Program (CHIP).

Sources:

ASOP 49

Individual Health Insurance, Leida, 2nd Edition, 2015, Chapter 5

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) List the requirements for actuarially sound Medicaid rates.

Commentary on Question:

Candidates were generally successful listing the requirements for sound Medicaid rates, as discussed in the ASOP. Most candidates did not include the definition of actuarially sound rates.

- The rates have been developed using generally accepted actuarial principles and practices
 - The rates are appropriate for the population to be covered and the services provided
 - The rates have been certified by an actuary who meets the qualification standards established by the AAA
 - Medicaid capitation rates are "actuarially sound" if, for business and period covered by the certification, projected capitation rates and other revenue sources provide for all reasonable, appropriate, and attainable costs
- (b) Identify other sources of data that the MCO could use and describe the advantages and disadvantages of each.

Commentary on Question:

Candidates who were most successful with part (b) identified sources that were specific to Medicaid data. The majority of candidates listed more general sources, such as consulting data. Points were still awarded if a more general source was listed as long as the candidate included a reasonable advantage or disadvantage for the source being discussed.

5. Continued

- State actuary summaries of claim or encounter data for the state managed care program
 - Advantage: reflects general experience under the Sunny State program
 - Disadvantage: may not reflect the particular MCO's mix within the Sunny State
 - State actuary summaries of claims experience under the state fee for service program
 - Advantage: may include more years of experience, if transition to managed care was recent
 - Disadvantage: May be difficult to anticipate appropriate level of managed care savings achievable
 - Sub-capitation rates from vendors Windy State will contract with
 - Advantage: best source of actual cost data for MCO
 - Disadvantage: will not cover all categories of service (needs to be combined with non-sub-capitated cost estimates)
 - State Fee Schedules for Sunny and Windy States
 - Advantage: can use in conjunction with Windy State data to reflect differences in provider reimbursement between Windy and Sunny State
 - Disadvantage: can be cumbersome to re-price claims
- (c) Describe adjustments required to the base experience from Windy state to make it appropriate for use in Sunny state.

Commentary on Question:

Candidates who were most successful with part (c) described many adjustments described in ASOP 49. Candidates that simply provided a list of adjustments without a description, or who described adjustments that were not specific or applicable to the Medicaid population did not receive credit. Most candidates included around four adjustments but could have received more credit for additional adjustments.

- Missing data: adjustments for missing encounters
- Incomplete data: for example, IBNR or claims in progress of settlement
- Population adjustment: for differences between the base and rating period
- Retroactive eligibility: for coverages retroactively effective prior to application
- Covered services: must reflect differences in requirements at the state level
- Data smoothing: to address anomalies and outliers in the data
- Claim cost trends: include adjustments for unit cost and utilization trends
- Non-Medical expenses: admin, taxes, underwriting gain, etc.

5. Continued

- (d) List characteristics used to classify members into different rate categories and describe the reasons why each would cause material differences in expected claims costs.

Commentary on Question:

Most commonly, candidates discussed age, gender and geography. Additional points were also available for describing categories more specific to Medicaid, such as qualifying event, dual-coverage with Medicare and Medicaid eligibility group. Candidates who listed rate categories applicable to other markets such as group coverage (e.g., group size, industry SIC, etc.) or ACA exchanges (5:1 age banding, smoker/non-smoker) did not receive credit as it was not in the context of the question.

- Age – older recipients are generally higher cost
 - Gender – females have higher costs due to pregnancy and delivery expenses
 - Qualifying event – those who are disabled are generally more costly than those who are not disabled
 - Geographic region – some locations are higher cost than average
 - Medicaid eligibility – Medicaid Expansion members may have higher costs than people covered by traditional Medicaid categories (low-income people, families and children) due to pent-up demand.
 - Eligibility for Medicare – this may reduce Medicaid costs due to coordination with Medicare benefits
- (e) Based on the state’s experience, the transportation benefit claim cost in 2016 was \$3.55 PMPM.

Recalculate the rates. Show your work.

Commentary on Question:

It is recognized that some of the details provided for part (e) were ambiguous or could have been interpreted differently by the candidates and, therefore, marks were awarded to candidates as long as the information was applied using reasonable pricing methodology and consistent with the candidate’s interpretation and assumptions. Common mistakes made by candidates included forgetting to adjust the Rate PMPM by the 90% target loss ratio to convert to a Claim PMPM and vice versa, and adjusting for the Pediatric Dental PMPM out of sequence (i.e. removing the 2018 PMPM from the adjusted 2016 claims).

5. Continued

Step	Child	Adult	Disabled	Formula
2018 Provided Rates PMPM	\$213.84	\$244.85	\$315.36	A
Target Loss Ratio	90%	90%	90%	B
2018 Claim PMPM	\$192.46	\$220.37	\$283.82	$C = A * B$
Reduction for Pediatric Dental PMPM	\$0	\$1.25	\$1.25	D
2018 Claim PMPM Adjusted for Pediatric Dental	\$192.46	\$219.12	\$282.57	$E = C - D$
Incorrect Trend % to Back-out for 2 Years	3.0%	3.0%	3.0%	F
2016 Claim PMPM	\$181.41	\$206.54	\$266.35	$G = E / (1 + F)^2$
Additional PMPM for Transportation	\$3.55	\$3.55	\$3.55	H
2016 Claim PMPM Adjusted for Transportation	\$184.96	\$210.09	\$269.90	$I = G + H$
Correct Trend % to Trend Forward for 2 Years	6.5%	6.5%	6.5%	J
2018 Claim PMPM Corrected	\$209.79	\$238.29	\$306.13	$K = I * (1 + J)^2$
2018 Corrected Rate PMPM	\$233.10	\$264.77	\$340.14	$L = K / B$

6. Learning Objectives:

4. The candidate will understand how to describe Government Programs providing Health and Disability Benefits in the U.S.

Learning Outcomes:

- (4a) Describe benefits and eligibility requirements for Medicare including Part D.

Sources:

- Group Insurance, Skwire, 7th Edition, 2016
- Ch. 8 Retiree Group Benefits (pages 118-129)
- Ch. 9 Government Health Plans in the United States
- Ch. 29 Medicare-Related Rate Filings and Certifications
- Essentials of Managed Health Care, Kongstvedt, 6th Edition
- Ch. 24 Health Plans and Medicare
- Individual Health Insurance, Leida, 2nd Edition, 2015
- Ch. 2 The Products, pp. 39-83

Commentary on Question:

This question is designed to test candidates' understanding of the similarities and differences between the 3 most common individual Medicare products.

Some candidates confused the various plans available (Original FFS parts A/B, part D, MA, MA-PD, Med Supp). Med supp primarily covers the cost sharing responsibilities of the member under FFS. It is a little vague to say this is an additional "benefit" above FFS or Med supp covers what FFS doesn't cover. Coverage and benefits usually refer to services like inpatient and outpatient. Med supp doesn't "cover" inpatient it pays for the cost sharing associated with inpatient which the beneficiary would otherwise pay under FFS.

Solution:

- (a) Compare and contrast a Medicare Supplement plan and a Medicare Advantage (MA) plan for the following components:
 - (i) Covered Benefits
 - (ii) Filing Process
 - (iii) Provider Contracting and Payment

6. Continued

- (i) Med supp covers some of the beneficiary cost sharing from Medicare parts A and B.
MA must cover at minimum parts A and B services. They can add other benefits beyond basic Medicare.
 - (ii) Plans must file Med supp forms with state insurance departments.
MA plans submit annual bids to CMS. If the bid is higher than the benchmark they charge a premium. If the bid is lower than the benchmark, the plan receives rebates to apply to additional benefits.
 - (iii) Med supp plans don't contract with providers. They pay some of the part A/B cost-sharing.
MA plans contract directly with providers for their payment rates.
- (b) Identify the steps to calculate the payor's portion of each of the following claim types under Original FFS Medicare, Medicare Supplement Plan C and Medicare Advantage (MA):
- (i) An inpatient admission
 - (ii) A doctor's office visit
 - (iii) Filling a prescription at a pharmacy
- (i) FFS: Allowed amount based on PPS/DRG system. Beneficiaries pay cost-sharing of a deductible and per-day copay, and Medicare pays the allowed amount less the cost-sharing.
Med Supp plan C: Pays the deductible and per-day costs for which the beneficiary is liable.
MA: Pays contracted amount minus cost-sharing.
 - (ii) FFS: Allowed amount is determined by a fee schedule with adjustments, which pays the sum of the area adjusted unit values multiplied by nationwide conversion factor. Beneficiary pays deductible and 20% coinsurance (no cost-sharing for preventive services), and Medicare pays the rest of the allowed amount.
Med Supp: pays deductible and coinsurance.
MA: Pays contracted amount minus cost-sharing.
 - (iii) FFS: Retail Rx is not covered under Original FFS (parts A/B).
Med Supp: Current plans don't cover it.
MA: Doesn't cover, unless it's MA-PD.

7. Learning Objectives:

5. The candidate will understand how to prepare and interpret insurance company financial statements in accordance with U.S. Statutory Principles and GAAP.

Learning Outcomes:

- (5a) Prepare a financial statement in accordance with generally accepted accounting principles.

Sources:

Higgins, Ch. 4 – Managing Growth

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Calculate LLR's profit margin and sustainable growth rate for years-end 2015 and 2016. Show your work.

Commentary on Question:

1. Many candidates received full credit on this part.
2. Candidates could also use the $g^* = PRAT$ formula for sustainable growth, which would yield the same results when applied correctly.
3. Candidates were not given credit for using $g^* = R \times ROE$, where ROE was defined as (change in equity)/(beginning of period equity). This is noted in the text as being valid when the only source of equity is from retained profits (no new shares are issued). This assumption is not valid in this situation, and as a result using this formula here would give different results than in the other cases.
4. Candidates were given full credit for using the prior year's equity or the current year's equity (assuming that equity was reported as of the beginning of the year).

Profit Margin = Profit / Revenue

Profit = Revenue – Expenses = (Sales + Investment Income) – (Admin Costs + Payroll)

$$\text{Profit Margin 2015: } \frac{(533,897+1,459)-(417,543+75,893)}{533,897} = \frac{41,920}{533,897} = 7.9\%$$

$$\text{Profit Margin 2016: } \frac{(667,371+1,773)-(520,001+94,523)}{667,371} = \frac{54,620}{667,371} = 8.2\%$$

Also acceptable was to not include investment income with revenue.

$$\text{Profit Margin 2015: } \frac{533,897-(417,543+75,893)}{533,897} = 7.6\%$$

$$\text{Profit Margin 2016: } \frac{667,371-(520,001+94,523)}{667,371} = 7.9\%$$

7. Continued

$$\text{Sustainable Growth Rate} = R \times ROE$$

R = retention rate = 100% (since no dividends paid)

$$ROE = (\text{Profit}) / (\text{Beginning Equity})$$

Using Profit as defined with investment income:

$$g^*_{2015} = \frac{41,920}{198,755} = 21.1\%$$

$$g^*_{2016} = \frac{54,620}{200,853} = 27.2\%$$

Using Profit without investment income gives sustainable growth rates of 20.1% and 23.8%.

- (b) List and describe the strategies you should discuss with the CEO to ensure financial success for LLR.

Commentary on Question:

1. Most candidates received full credit on this part.
2. candidates providing strategies without description were not given full credit.
3. Depending on how sustainable growth rate was calculated in (a), candidates may have determined that sustainable growth exceeds actual growth. In that case, full credit was given if answers were the opposite of those listed below.

$$\text{Growth rate}_{2015} = \frac{533,897}{426,897} - 1 = 25.1\%$$

$$\text{Growth rate}_{2016} = \frac{667,371}{533,897} - 1 = 25.0\%$$

Actual growth exceeds sustainable growth, so the company can:

- Sell new Equity - sell new shares in order to finance further growth
- Increase Financial Leverage - increases the cash infused into the company through debt
- Reduce dividend payout - increases the proportion of earnings that remain in the business. **For full credit here, students should note that LLR cannot use this strategy, since they do not currently pay dividends.**
- Prune away marginal activities - focus investment on the businesses' key products/services
- Outsource some or all of production - some company activities could be outsourced, reducing needed assets to perform the activities
- Increase prices - cuts growth rate and increases available cash
- Merge with a "cash cow" - Finance growth

- (c) Describe how the CEO's financial strategy decisions would change if the business were to enter lucrative overseas markets.

7. Continued

Commentary on Question:

Many answers were accepted here, but candidates who simply reiterated their responses from part (b) were not given credit.

Higgins page 123 notes some issues with overseas equity that some markets are poorly developed, or not developed at all. Issuing equity is expensive and generally investors will be limited to family and friends of owners. Even in well-developed markets, issuing equity can be difficult.

Alternate reasonable answers were accepted such as:

“There would be a substantial cost to enter into a new market, which would slow growth. LLR may be able to subsidize the new market’s implementation costs with the growth from its existing business.”

- (d) The CEO believes sales will grow by 30% from 2016 to 2017.
- (i) Identify the costs which have historically varied in proportion to sales.
- (ii) Construct a percent-of-sales forecast for the 2017 financial elements based on data from 2014 through 2016. Show your work.

Commentary on Question:

- Candidates generally did well with this question.*
- Candidates who only converted items identified in part (i) into their forecast into a percent of sales were given full credit, as long as they completed the forecast with justification for the other line items.*
- Payroll, administrative costs, and inventory on hand may vary with sales. This answer is not specific to this problem. Candidates identifying only payroll and administrative costs based on the actual percentages below were given full credit.*

Payroll, admin, and inventory vary with sales.

% of Sales	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017F</u>	<u>2017F</u>
Admin costs	15.3%	14.2%	14.2%	14.6%	126,327
Dividends Paid	0.0%	0.0%	0.0%	0.0%	-
Equity	46.6%	37.6%	33.3%	39.2%	339,850
Inventory on Hand	59.3%	51.8%	44.8%	51.9%	450,688
Investment Income	0.4%	0.3%	0.3%	0.3%	2,828
Outstanding Debt	12.3%	11.0%	7.3%	10.2%	88,680
Payroll	82.9%	78.2%	77.9%	79.7%	691,244
Sales	100.0%	100.0%	100.0%	100.0%	\$867,582

7. Continued

1. Percent of sales is determined as the value divided by sales for that year. For example, Admin Costs in 2014: $\frac{65,332}{426,897} = 15.3\%$
 2. 2017 forecasted total sales is based on a 30% increase in sales ($1.3 \times 667,371$)
 3. Percents in the 2017 forecast will vary based on the averaging method used. Various answers were accepted if justified. The values shown are based on a straight average of percents.
 4. 2017 Forecasted dollar values will vary based on averaging method used for percents. Example calculation: 2017 forecasted payroll = $79.7\%(867,582) = 691,244$.
- (e) Assume the CEO's sales prediction is correct, a 50% growth in total employees, and the current employees do not receive raises.

Calculate the maximum average salary for 2017 new hires using the percent-of-sales forecast from (d)(ii). Show your work.

Commentary on Question:

Most candidates did well on this question.

Projected Salary (from part e):	691,244
- Current salary:	<u>520,001</u>
Increase in Salary	171,243
Per new employee	$171,243 \div 4 = \mathbf{\$42,750}$

Answers will vary based on projected salary in part (d).

- (f) Net sales are reduced by \$20,000 in 2014 and \$10,000 in 2015 due to a reporting error.
- (i) Calculate the revised projected payroll in your 2017 percent-of-sales forecast. Show your work.
 - (ii) Calculate the change in administrative costs necessary to maintain the previously projected profit level in part (d). Show your work.

Commentary on Question:

Many candidates skipped this part of the question. Of the candidates who answered the question, most did so correctly.

7. Continued

Restated payroll as percent-of-sales for 2014 is: $\frac{353,896}{426,897-20,000} = 87.0\%$

Restated payroll as percent-of-sales for 2015 is: $\frac{417,543}{533,897-10,000} = 79.7\%$

Restated 2017 forecasted percent is: $\frac{87.0\%+79.7\%+77.9\%}{3} = 81.5\%$

Restated 2017 forecasted payroll is $\$867,582 \times 81.5\% = \mathbf{\$707,345}$ (Varies based on averaging method)

Projected payroll increased by \$16,101 from part (d) to part (f), so decrease admin by **\$16,101**. (Varies based on averaging method).

8. Learning Objectives:

7. The candidate will understand and evaluate Retiree Group and Life Benefits in the United States.

Learning Outcomes:

- (7b) Determine appropriate baseline assumptions for benefits and population.
- (7c) Determine employer liabilities for retiree benefits under various accounting standards.

Sources:

Study Note GHC-816-16 and Group Insurance Chapter 8

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Calculate ABC's accumulated postretirement benefit obligation. Show your work.

Commentary on Question:

Many candidates could recite the formulas for EPBO and APBO but not as many could apply those formulas to derive a solution. Many candidates did recognize that Y and Z would have the same APBO and many candidates identified that X's APBO would be 16/20 of its EPBO. The question did not specifically say whether costs were incurred at the beginning, middle, or end of year so credit was given for any of those as long as the candidate trended and discounted appropriately.

Employee W:

$$\begin{aligned} \text{EPBO/APBO} &= \$2,000(1.108)(1.075)(1.07)(1.065)(1.06)/1.04^5 + \\ &\quad \$2,000(1.108)(1.075)(1.07)(1.065)(1.06)(1.055)/1.04^6 + \\ &\quad \$2,000(1.108)(1.075)(1.07)(1.065)(1.06)(1.055)(1.05)/1.04^7 + \\ &\quad \$2,000(1.108)(1.075)(1.07)(1.065)(1.06)(1.055)(1.05)^2/1.04^8 + \\ &\quad \$2,000(1.108)(1.075)(1.07)(1.065)(1.06)(1.055)(1.05)^3/1.04^9 = \underline{\underline{\$11,795}} \end{aligned}$$

Employee X:

$$\begin{aligned} \text{EPBO} &= \$2,000(1.108)(1.075)(1.07)(1.065)(1.06)/1.04^5 + \\ &\quad \$2,000(1.108)(1.075)(1.07)(1.065)(1.06)(1.055)/1.04^6 + \\ &\quad \$2,000(1.108)(1.075)(1.07)(1.065)(1.06)(1.055)(1.05)/1.04^7 + \\ &\quad \$2,000(1.108)(1.075)(1.07)(1.065)(1.06)(1.055)(1.05)^2/1.04^8 + \\ &\quad \$2,000(1.108)(1.075)(1.07)(1.065)(1.06)(1.055)(1.05)^3/1.04^9 = \$11,795 \end{aligned}$$

$$\text{APBO (X)} = 11,795 * 16/20 = \underline{\underline{\$9,436}}$$

Employees Y and Z:

$$\begin{aligned} \text{EPBO/APBO} &= \$2,000 + \$2,000(1.08)/(1.04) + \$2,000(1.08)(1.075)/(1.04)^2 + \\ &\quad \$2,000(1.08)(1.075)(1.07)/(1.04)^3 + \$2,000(1.08)(1.075)(1.07)(1.065)/(1.04)^4 \\ &= \underline{\underline{\$10,694}} \end{aligned}$$

$$\text{Total APBO} = 11,795 + 9,436 + 10,694 + 10,694 = \underline{\underline{42,619}}$$

8. Continued

\$12,000. Calculate the net periodic postretirement benefit expense. Show your work.

Commentary on Question:

Candidates did unfavourably on this part (b) as they didn't understand how the \$12,000 affected the EPBO. Similar to part (a), many candidates memorized formulas for NPPBC, Service Cost, and Interest Cost but didn't always know how to apply them.

The \$12,000 affects pre-age 65 claim costs. Since the given assumption is that employees retire at the later of age 65 or 20 years of service, this change in expected claim costs does not impact the EPBO.

$$\text{NPPBC} = \text{Service Cost} + \text{Interest Cost} + \text{Gain/Loss Amortization}$$

Employee X is the only one with any service cost remaining.

$$\text{Service Cost} = 11,795/20 = \$590$$

$$\text{Interest Cost} = 0.04 * (\$42,619 + \$590 - \$4,000/2) = 1,648$$

$$\text{G/L Amortization} = \max (\$42,619 - 10\% * \$42,619, 0) / \text{Remaining Service Until Retirement} = 0$$

$$\text{NPPBC} = \$590 + \$1,648 + \$0 = \underline{\underline{\$2,238}}$$

- (c) You discover an unrecognized prior service cost of \$6,800. Design an amortization schedule for the unrecognized prior service cost based on the expected remaining years of service prior to full eligibility for the participating employees. Show your work.

Commentary on Question:

Many candidates obtained full credit for this part (c) by correctly realizing that only X had remaining service years and then creating an amortization schedule based on those years. Candidates were given partial credit if their amortization schedules were more aggressive than \$1700/yr for 4 years since "more aggressive" is accepted under FAS 106.

Employee W is a fully eligible active employee and therefore not included in the PSC amortization.

Similarly, the retired employees (Y and Z) are also excluded from the PSC amortization.

Only Employee X has their future expected years of service included in the calculation. So the amortization of the \$6,800 is simply over the 4 remaining years to their full eligibility. $\$6,800/4 = \$1,700$ per year for the next 4 years.

8. Continued

- (d) Describe common underwriting considerations for retiree health insurance plans.

Commentary on Question:

Candidates tended to “list” instead of “describe”. Full credit was only awarded for descriptive considerations.

Post-65 retiree claims can be more difficult to process because of coordination of benefits (Medicare). More claims must be manually adjudicated, driving up administration costs.

Retirees have a higher number of claims, and thus use proportionally more claims and customer service resources.

Pharmacy costs as a proportion of total health costs are much higher than for an active retiree.

Selection issues are significant for retiree plans; it is not uncommon that a retiree plan, where premiums are generously subsidized, may cost half that of retiree plans that are unsubsidized. Thus, employer subsidization is a very important underwriting consideration.

9. Learning Objectives:

1. The candidate will understand how to describe plan provisions typically offered under:
 - a. Group and individual medical, dental and pharmacy plans
 - b. Group and individual long-term disability plans
 - c. Group short-term disability plans
 - d. Supplementary plans, like Medicare Supplement
 - e. Group and Individual Long Term Care Insurance
2. The candidate will understand and recommend a manual rate for each of the coverages described in Learning Objective 1.

Learning Outcomes:

- (1b) Describe each of the coverages listed above.
- (2d) Calculate and recommend a manual rate.
- (2e) Identify critical metrics to evaluate actual vs. expected results.
- (2f) .Describe the product development process including risks and opportunities to be considered during the process.

Sources:

Group Insurance, Skwire, 7th Edition, Chapter 6, Chapter 22
Timing's Everything: The Impact of the Benefit Rush

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Describe the three classes listed in the table above and identify possible causes of the discrepancy between the experience and benchmark.

Commentary on Question:

For the most part, candidates were able to successfully describe the three classes. Candidates who performed well on this question were able to identify multiple contributing factors for each class. Not all candidates recognized that the experience reflected non-preferred providers.

Class I is preventive and diagnostic services, such as routine cleaning, x-rays, etc.
Class II is basic services, such as periodontics, endodontics, fillings, etc.
Class III is major procedures, such as crowns, bridges, dentures, etc.

9. Continued

Class I

- Significantly different demographics
- Experience group more educated about benefits

Class II

- Higher class I utilization reducing the need for class II procedures
- Possible benefit design differences

Class III

- Inadequate provider network for dentists performing major procedures
- Insufficient waiting period or pent up demand for new enrollees
- Significantly different demographics
- Lack of utilization management

- (b) Recommend four benefit plan changes that could drive the experience of Your Eyes and Smiles closer to its benchmark. Justify your recommendations.

Commentary on Question:

In general, candidates were able to recommend meaningful benefit plan changes. The candidates that did well on this question focused on benefit changes by class as well as distinguishing in and out of network.

- Increase member coinsurance on class III – higher member cost share to further steer members to preferred providers and control costs
 - Increasing non-preferred deductible – to steer members to preferred providers
 - Frequency limitations for preventive as well as major procedures.
 - Separate annual maximum for preferred and non-preferred services – decrease non-preferred annual max to limit insurer liability
- (c) Compare and contrast the use of the following underwriting and rating parameters for dental versus medical group insurance:
- Group size
 - Geographic area
 - Age and gender
 - Waiting periods
 - Minimum level of participation requirement
 - Credibility thresholds

9. Continued

Commentary on Question:

Most candidates could describe the underwriting factors, however to receive full credit, candidates needed to highlight the differences between medical and dental including limitations imposed by the ACA where applicable. Answers from a Canadian regulatory perspective were also accepted.

Underwriting Factor	Medical	Dental
Group Size	For medical insurance, group size is not an allowable rating factor under ACA for small group. In general, the larger the group the lower the price and anti-selection risk, this is true for both dental and medical plans.	Dental plan generally has minimum group size, 5 is a typical minimum, but it could be as little as 2.
Geographic Area	Area factor could vary by state service area, or zip code, except that ACA limits number of areas for small groups.	Area factor could vary by state service area, or zip code.
Age and Gender	ACA limits the range of factors for age (1:3) and requires unisex rates for groups for small groups.	In general, females have higher dental costs and claim cost increases with age.
Waiting Periods	The ACA imposes a maximum waiting period of 90 days.	Dental plans often impose waiting periods on expensive dental services like Class II and Class III to prevent antiselection.
Minimum Levels of Participation	The higher level of participation rate, the lower the anti-selection risk. ACA limitations apply to small groups.	The higher level of participation rate, the lower the anti-selection risk. If a group is significantly below 100% participation rate, then there may be a premium load or benefit deduction to limit anti-selection risk to the insurer.
Credibility	Dental plan's claims are less volatile than medical; the credibility threshold is generally less than medical.	

10. Learning Objectives:

2. The candidate will understand and recommend a manual rate for each of the coverages described in Learning Objective 1.

Learning Outcomes:

- (2d) Calculate and recommend a manual rate.
- (2e) Identify critical metrics to evaluate actual vs. expected results.

Sources:

Skwire, Ch 21 (actuarial cost method)

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Calculate the 2015 expected net prescription drug cost PMPM for the Super Rx offering using the actuarial cost method. Show your work

Step 1: Calculate the 2015 AWP

	2014 AWP (from case study)	Unit Cost Trend	2015 AWP
Generic	\$45.00	1.00%	\$45.45
Preferred Brand	\$200.00	8.00%	\$216.00
Specialty	\$2,700.00	8.00%	\$2,916.00

Step 2: Determine the 2015 allowed cost

	2015 AWP	Discount	Dispensing Fee	2015 Allowed Cost
Generic	\$45.45	75.00%	\$2.00	\$13.36
Preferred Brand	\$216.00	25.00%	\$2.00	\$164.00
Specialty	\$2,916.00	10.00%	\$2.00	\$2,626.40

Step 3: Determine the 2015 Utilization

	2014 Utilization/ 1,000	Utilization Trend	New Plan Impact	2015 Utilization/ 1,000
Generic	8,205.60	1.00%	5.00%	8,702.04
Preferred Brand	2,209.20	1.25%	3.00%	2,303.92
Specialty	105.20	5.00%	1.00%	111.56
	10,520	--> 2014 small group Rx utilization fr		11,118

--> assumes that all non-preferred b

Step 4: Determine net costs via actuarial cost method

	2015 Utilization/ 1,000	2017 Allowed Cost	Gross PMPM	Copay Amount	Value of Copay	Net Benefit Cost PMPM
Generic	8,702.04	\$13.36	\$9.69	\$10.00	\$7.25	\$2.44
Preferred Brand	2,303.92	\$164.00	\$31.49	\$50.00	\$9.60	\$21.89
Specialty	111.56	\$2,626.40	\$24.42	\$150.00	\$1.39	\$23.02
Total			\$65.59		\$18.25	\$47.35

- (b) Determine the preferred brand discount required to offset the impact of the increased utilization expected from the Super Rx offering. Show your work.

10. Continued

Commentary on Question:

Many candidates were confused about adjustment on the dispensing fees, copays.

Step 1: Determine the 2015 Utilization removing the impact of the new plan

	2015 Utilization/ 1,000	New Plan Impact	2015 Utilization/ 1,000
Generic	8,702.04	5.00%	8,287.66
Preferred Brand	2,303.92	3.00%	2,236.82
Specialty	111.56	1.00%	110.46
	11,118		10,635

Step 2: Determine net costs via actuarial cost method with this utilization

	2015 Utilization/ 1,000	2015 Allowed Cost	Gross PMPM	Copay Amount	Value of Copay	Net Benefit Cost PMPM
Generic	8,287.66	\$13.36	\$9.23	\$10.00	\$6.91	\$2.32
Preferred Brand	2,236.82	\$164.00	\$30.57	\$50.00	\$9.32	\$21.25
Specialty	110.46	\$2,626.40	\$24.18	\$150.00	\$1.38	\$22.80
Total			\$63.97		\$17.61	\$46.37

Step 3: Determine the discount on preferred that yields the same costs as above

	2015 Utilization/ 1,000	2015 Allowed Cost	Gross PMPM	Copay Amount	Value of Copay	Net Benefit Cost PMPM
Generic	8,702.04	\$13.36	\$9.69	\$10.00	\$7.25	\$2.44
Preferred Brand	2,303.92	\$158.60	\$30.45	\$50.00	\$9.60	\$20.85
Specialty	111.56	\$2,626.40	\$24.42	\$150.00	\$1.39	\$23.02
Total			\$64.56		\$18.25	\$46.31

Required discount on preferred brand drugs is somewhere between 27 and 28%.

11. Learning Objectives:

1. The candidate will understand how to describe plan provisions typically offered under:
 - a. Group and individual medical, dental and pharmacy plans
 - b. Group and individual long-term disability plans
 - c. Group short-term disability plans
 - d. Supplementary plans, like Medicare Supplement
 - e. Group and Individual Long Term Care Insurance
2. The candidate will understand and recommend a manual rate for each of the coverages described in Learning Objective 1.

Learning Outcomes:

- (1c) Evaluate the potential financial, legal and moral risks associated with each coverage.
- (2a) Identify and evaluate sources of data needed pricing, including the quality, appropriateness and limitations of each data source.
- (2b) Develop an experience analysis.
- (2c) Calculate and recommend assumptions.
- (2e) Identify critical metrics to evaluate actual vs. expected results.
- (2g) Apply actuarial standard of practice in evaluating and projecting claim data.

Sources:

Group Insurance, Skwire, Ch 3, 18 (1 marking pt), 20, 21, 23, 34

Individual Insurance, Leida, Ch 2, 5

Commentary on Question:

This question is designed to test the candidate's ability to develop a renewal rate based off a given set of pricing assumptions, to assess financial considerations, and to explain adjustments needed between the group and individual health claims experience. As to be expected, candidates who obtained full score were able to correctly perform the calculation, and more importantly, articulate differences in the experience not stopping at with only a list of considerations.

Solution:

- (a) Calculate the 2016 paid-to-allowed claims ratio for Paisley LLC. Show your work.

11. Continued

Commentary on Question:

Although the question did not ask the candidate to calculate the member responsibility, calculating it did allow the candidate to see the impact of the OOP maximum on high cost members. Whether the candidates provided answers on a monthly or annual basis, full credit was given as long as the correct paid to allowed ratio was calculated.

Allowed cost for low and medium cost members:

- $\$270 / (1 - \text{Coinsurance}) = \mathbf{\$450}$
 - \$180 member responsibility
- $\$810 / (1 - \text{Coinsurance}) = \mathbf{\$1350}$
 - \$540 member responsibility

For high cost members:

- $\$40500 / (1 - \text{Coinsurance}) = \67500
 - \$27000 member responsibility
 - This exceeds the OOP maximum of \$2250
 - Revised allowed is **\$42750**

The average paid PMPY is the sumproduct of distribution and paid PMPYs for each type of member. **\$4725**

The average allowed PMPY is the sumproduct of distribution and allowed PMPYs for each type of member. **\$5400**

The paid-to-allowed ratio is $\$4725 / \5400 or **87.5%**

(b)

- (i) Calculate the 2018 premium and the two-year rate increase for Paisley LLC based on a target loss ratio of 85%. Show your work.
- (ii) Comment on the sufficiency of the rates calculated based on the finance department's stated assumptions. Show your work.
- (i) From part (a), trend average allowed by 5.41% for 2 years

- $\$5400 * (1 + .0541)^2 = \6000
- 2018 experience allowed PMPY

Because the experience is not fully credible based on the formula provided, this amount needs to be blended with the manual allowed PMPY.

11. Continued

- Credibility $(500/2000)^{1/2} = .5$
- Annualized manual allowed PMPM $(\$600 * 12) = \7200
- Therefore the blended PMPY is
 - $.5 * \$6000 + (1 - .5) * \7200
 - \$6600 blended allowed PMPY

Estimate paid based on the 2018 expected paid to allowed ratio of 0.9

- $\$6600 * .9 = \5940
- Paid PMPM is $\$5940 / 12 = \495

Based on the desired loss ratio of 85%, the proposed rate would be

- $\$495 / 0.85 = \582.35

To determine the rate increase, calculate the 2016 Premium PMPM

- 2016 paid divided by 2016 loss ratio
 - $\$4725 / 0.7 = \$6750 / 12 = \$562.50$
 - Rate increase = $\$582.35 / \$562.50 - 1 = 3.5\%$

(ii) Calculate the rate based on the Finance Department numbers and compare the rates.

- $(\$495 + \$35 + \$5) / (1 - .08 - .02) = \$535 / 0.9 = \$594.44$
- The proposed rates of \$582.35 are insufficient to meet the expected financial obligations

(c) Paisley LLC has elected to drop group coverage altogether. The individual exchange actuary at Minnesota Health would like to have the experience of Paisley LLC to estimate enrollment and costs for its Silver plan.

List and explain elements, other than taxation, that should be considered when adjusting the experience of Paisley LLC to develop rates for the individual exchange.

Commentary on Question:

Candidates did well on this portion as long as they remember to explain why the adjustments were of importance.

Currently employees get \$300 per month subsidy from employer regardless of income and family size. The subsidy on individual exchange subsidy is based on FPL so the employee cost for insurance will differ. This difference in contribution may lead to anti-selection and impact the underlying risk of the population.

11. Continued

The actuary should adjust for any difference in the covered benefits of both products to get to a comparable set of benefits (e.g, do both cover vision, hearing, chiro, etc.).

12. Learning Objectives:

3. Evaluate and recommend an employee benefit strategy.

Learning Outcomes:

- (3a) Describe structure of employee benefit plans and products offered and the rationale for offering these structures.
- (3b) Describe elements of flexible benefit design and management.
- (3c) Recommend an employee benefit strategy in light of an employer's objectives.

Sources:

GHC-106-16, McKay Ch.16, Rosenbloom

Commentary on Question:

The question is designed to test the knowledge of different employee vs employer health benefit contribution strategies. The focus was on the employer perspective.

Solution:

- (a) Describe employer considerations in determining the appropriate level of financial commitment to their benefit plans.

Commentary on Question:

Candidates did well adding brief descriptions to the employer considerations, but few listed all considerations from the material.

- Total Compensation Philosophy- reflects the employer's overall compensation levels, how it's divided between salary and benefits and what types of benefits are offered.
- Benefits Budget- employers need their benefits program to fit within their budgetary constraints, including payroll contributions
- Benefit Competitiveness- Consider the total benefit structure compared to other employers with whom they compete for talent.
- Collective Bargaining- employers with populations who might consider entering into a collectively bargained agreement may be inclined to provide more generous coverage at a lower cost to avoid unionization
- Legislative and Regulatory Issues - Can influence payroll contribution levels, as has been experienced in the United States as a result of the Affordable Care Act (ACA)

12. Continued

- (b) Assuming equal enrollment in Plan 1 and Plan 3:
- (i) Calculate the number of employees that must select Plan 2 in order for Raspberry Corporation to be indifferent to the employee contribution strategies. Show your work.
 - (ii) Recommend one of the employee contribution strategies assuming that 25% of employees select Plan 2. Justify your recommendation.

Commentary on Question:

Some candidates calculated employee contribution amounts and treated them as employer amounts in their recommendation. After making a recommendation, a more detailed justification received more points.

- (i) Set employer contribution amounts multiplied by x employees in Plans 1 and 3, and y employees in Plan 2.

$$x(330+230)+y*130=x(300+225)+y*150$$

$$\text{Plug in } y=1000-2x$$

$$y=467 \text{ employees}$$

- (ii) Membership distribution: 375 employees each in Plans 1 and 3, 250 employees in Plan 2

25% of premium strategy: Employer contribution =

$$400*0.75*375+200*0.75*250+300*0.75*375 = \$234,375$$

\$70 PEPM strategy: Employer contribution =

$$(400-70)*375+(200-70)*250+(300-70)*375 = \$242,500$$

Recommend 25% of premium strategy as it is cheaper for the company. It is also a more equitable way for employees to contribute based on benefits. The strategy also mitigates the risk of adverse selection of members into higher cost plans.

- (c) Determine the 2018 total premium PEPM for Plan 1 that will maintain the 2017 aggregate expected benefit cost-to-premium ratio using your recommendation and enrollment assumptions from part (b)(ii). Show your work.

Commentary on Question:

This part is asking candidates to back into a price for Plan 1 using the benefit-cost-to-premium ratio.

$$2018 \text{ Expected Benefit Cost} = (380*600+195*400)/1000 = \$306$$

$$2018 \text{ Premium} = (400*600+200*400)/1000 = \$320$$

$$2018 \text{ Ratio} = 306/320 = .9563$$

12. Continued

$$2019 \text{ Expected Benefit Cost} = (395*375+195*250+290*375)/1000 = \$305.63$$

$$2019 \text{ Premium} = (X*375+200*250+300*375)/1000 = 0.375X+162.50$$

$$.9563 = 305.63/(0.375X+162.50)$$

$$X = \text{total premium PEPM for Plan 1} = \$419$$

13. Learning Objectives:

3. Evaluate and recommend an employee benefit strategy.

Learning Outcomes:

- (3a) Describe structure of employee benefit plans and products offered and the rationale for offering these structures.

Sources:

A Practical Guide to Private Exchanges, HealthWatch, May 2015

Commentary on Question:

Candidates that scored well on parts (a) and (b) were able to easily identify the 5 Elements of a Private Exchange as well as summarize the differences between Private and Public Exchanges with a table that was in the article. Some candidates scored partial credit based on background knowledge about exchanges from other sources. Part (c) was difficult for candidates. Many candidates were able to get partial credit by setting up the Exchange distribution. Many candidates did not set an assumption for Price Corporation's current costs, and therefore couldn't answer the question fully.

Solution:

- (a) List common attributes that are central to private exchanges.
 1. Employee choice
 2. Employer subsidies
 3. Ancillary product offering
 4. Online enrollment and decision-making tools
 5. Benefit administration
- (b) Compare the core attributes of private exchanges and public exchanges established under the Affordable Care Act (ACA).

13. Continued

Element	Public Exchange	Private Exchange
Who sponsors	Government	Employer
Who can enroll	Individuals and small groups	Employees and retirees of sponsoring employer
Types of coverage available	Medical and prescription drug	Medical, prescription drug, dental, vision and other voluntary benefits at the employer's discretion
Plan designs available	Plans must provide actuarial values of 90 percent, 80 percent, 70 percent or 60 percent as defined by the federal Actuarial Value Calculator. Individuals may be eligible for income-based reduced cost-sharing.	Exchange operator or employer defines the plan designs.
Who pays for coverage	Individuals and small employer groups pay the premiums for coverage. Individuals may be eligible for income-based government subsidies. Small employers may be eligible for small business tax credits.	Employers provide a subsidy toward the cost of coverage and covered members pay the balance.

- (c) Determine the employee contributions for enrollees electing the lower cost carrier in each region that would result in no change to Prince Corporation's costs. Show your work.

Sample Solution 1: Price Corporation's current cost = X

EE contribution, higher cost carrier = \$600 /year

EE contribution, lower cost carrier = Y /year

Price Corporation's cost with Private Exchange

(75% select lower cost carrier):

Region1 = 50 x (\$4,800 - \$600) + 150 x (\$4,500 - Y)

Region2 = 150 x (\$4,200 - Y) + 50 x (\$4,500 - \$600)

Region3 = 50 x (\$5,400 - \$600) + 150 x (\$5,100 - Y)

13. Continued

Total all regions:
 $\$2,715,000 - 450 Y = X$

$Y = (\$2,715,000 - X)/450$
or $= \$6,033.33 - X/450$
or $= \$600 - (X - 2,445,000)/450$

Alternatively, candidates could state an assumption for the current cost, leading to a \$ value. For example, assuming PRPL insurance only, or assuming 50% PRPL and 50% REDCOR insurance (without discount on employee contributions). Following is the solution for if the current cost was assumed to be PRPL insurance only:

Sample Solution 2: Price Corporation's current cost = PRPL Only

Price Corporation's current cost:
 $= 200 \times [(\$4,800 - \$600) + (\$4,200 - \$600) + (\$5,400 - \$600)]$
 $= \$2,520,000$

Price Corporation's cost with Private Exchange
(75% select lower cost carrier):
EE contribution, higher cost carrier = \$600 /year
EE contribution, lower cost carrier = Z /year

Region1 = $50 \times (\$4,800 - \$600) + 150 \times (\$4,500 - Z)$
Region2 = $150 \times (\$4,200 - Z) + 50 \times (\$4,500 - \$600)$
Region3 = $50 \times (\$5,400 - \$600) + 150 \times (\$5,100 - Z)$

Total all regions:
 $\$2,715,000 - 450 Z = \$2,520,000$
 $Z = \$433$

14. Learning Objectives:

2. The candidate will understand and recommend a manual rate for each of the coverages described in Learning Objective 1.

Learning Outcomes:

- (2d) Calculate and recommend a manual rate.

Sources:

Group Insurance, Chapter 21

Commentary on Question:

Candidates generally missed that this problem called for the construction of a Claims Probability Distribution (CPD) in order to be solved.

Many candidates tried to take a shortcut and solve problem using simple algebra, by calculating the employer cost sharing in each of the claims ranges and multiplying by the frequency of each claims range, but this typically resulted in an incorrect answer since the deductible given was in the middle of one of the claims ranges. Partial credit was awarded for candidates who took this approach, to recognize their correct application of the cost sharing parameters, even if their final answer was incorrect. Some candidates missed that the average claims given in the table were annual claims and incorrectly multiplied by 12, which was not needed in their calculations. Other candidates made an error in calculating the employee's expected cost, rather than the employer's claim cost which the question asked for. Candidates are advised to review the source material, which had an example in this exact table format.

Solution:

Calculate the employer's expected claims cost per member per year under the new plan design. State any assumptions made. Show your work.

14. Continued

The information given yields the following CPD, with the Columns labelled at the top:

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
Claims range	Frequency	Avg Annual Claims	Annual Cost	Accumulated Frequency	Accumulated Annual Cost	Value of Claim Cost in excess of the high end of range	Value of Deductible equal to high end of range
\$0	0.40	0.00	0.00	1.00	138.75	138.75	0.00
\$0.01 - \$50.00	0.25	40.00	10.00	0.60	138.75	111.25	27.50
\$50.01 - \$150.00	0.15	100.00	15.00	0.35	128.75	83.75	55.00
\$150.01-\$250.00	0.10	200.00	20.00	0.20	113.75	68.75	70.00
\$250.01 - \$1,100.00	0.05	375.00	18.75	0.10	93.75	20.00	118.75
>\$1,100.00	0.05	1,500.00	75.00	0.05	75.00	0.00	138.75

- Columns 1-3: Given
- Col 4: Annual cost is the product of the frequency and average annual claims (Col 2 * Col 3)
- Col 5: Accumulated frequency is the backsum of Col 2
- Col 6: Accumulated annual claims cost is the backsum of Col 4
- Col 7: This is calculated as the difference between the following accumulated annual cost (Col 6) and the product of the high end of the range of claims and the following accumulated frequency (Col 5)

Example: For the \$0.01 - \$50.00 bucket, $128.75 - (\$50 * 0.35) = 111.25$

- Col 8: The value of the deductible is just the complement of Col 7, so that the final two columns always sum to the total accumulated annual cost of 138.75

Now using the CPD above, apply the proper cost sharing parameters.

- Plan pays 0% of first \$100 due to the deductible
- Plan pays 60% of next \$1,000, from \$100 - \$1,100
- Plan pays 100% of amounts above \$1,100, due to the annual out-of-pocket limit

From Col 8 of CPD:

Value of Deductible at \$100 = Average (27.50 , 55) = 41.25

Value of Deductible at \$1,100 = 118.75

Value of Deductible > \$1,100 = 138.75

Thus, the employer's expected claims cost per member per year are:

$0\% * 41.25 + 60\% (118.75 - 41.25) + 100\% * (138.75 - 118.75) = 66.50$

15. Learning Objectives:

1. The candidate will understand how to describe plan provisions typically offered under:
 - a. Group and individual medical, dental and pharmacy plans
 - b. Group and individual long-term disability plans
 - c. Group short-term disability plans
 - d. Supplementary plans, like Medicare Supplement
 - e. Group and Individual Long Term Care Insurance

6. Evaluate the impact of regulation and taxation on companies and plan sponsors in the U.S.

Learning Outcomes:

- (1c) Evaluate the potential financial, legal and moral risks associated with each coverage.

- (6b) Describe the major applicable laws and regulations and evaluate their impact.

Sources:

Group Insurance, Skwire 7th Edition, Chapter 5 – Medical Benefits in the United States

Commentary on Question:

Part (a) was completed well as candidates understood what was asked and answered this question quite well. Part (b) was not understood and candidates scored unfavorably. For part (b) it felt as though they didn't understand that the question was referring to the risk associated with the "US insurance industry" and thus didn't get many points.

Solution:

- (a) Describe arguments for and against cost sharing for group medical insurance.

Commentary on Question:

Candidates generally performed well on this part.

1. Control of utilization

- a. Pro – Places cost concerns in hands of insured so services are used less frequently
- b. Con – Reduced utilization will result in decreased health or delayed increased costs as health deteriorates. This could lead to larger health expenditures later.

2. Control of costs

- a. Pro – Provides more affordable coverage
- b. Con – Federal tax policy relating to the taxability of healthcare costs encourages maximizing premiums and minimizing cost sharing

15. Continued

3. Control of risks to insurer

- a. Pro – Results in a more insurable risk as more catastrophic type benefits are covered.
 - b. Con – Creates potential plan design and administrative burdens.
- (b) Describe two sources of financial or moral risks to the U.S. insurance industry associated with group medical insurance

Commentary on Question:

Candidates did not perform well on this part. Candidates didn't answer the question from the US insurance industry perspective with the exam syllabus information in mind.

Federal income tax treatment (financial and/or moral risk) – US federal income taxes are favorable to medical insurance or benefits in that benefits paid by employer do not generate taxable income to employee. As a result, dollars paid by employer are of greater value to employee than dollars paid directly to employee because they would be taxable. This creates a risk because services are now subject to a level of anti-selection that may cause the system to fail.

Preventive services (financial and/or moral risk) – legislative requirements that certain preventative services be covered with no cost-sharing creates a moral and/or financial risk because preventative services fail all the conditions of an insurable event. They are not random or catastrophic and are within the control of the insured.

Lack of cost sharing and provider restrictions – indemnity benefits, which involve limited or no cost sharing or provider restrictions are a source of financial and/or moral risk of overspending on the part of the insured.