

GH CORU Model Solutions

Spring 2016

1. 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:

Ch. 17 Health Benefit Exchanges and Connectors, Group Insurance, Bluhm, 6th

Implication of Individual Subsidies in the Affordable Care Act – What Stakeholders Need to Understand, HealthWatch, May 2014

Commentary on Question:

Candidates generally did well on parts a, b, and c, but struggled with part d. More specific commentary is included within each subsection below.

Solution:

- (a) Describe the principal functions of a Health Benefit Exchange (HBE) and the general features of benefit plans that can be offered.

Commentary on Question:

Candidate needed to describe functions of an HBE and general features of benefit plans to receive any credit. The best responses included not only mention of a marketplace for health insurance (i.e. finding, comparing, and purchasing insurance), but also noted how exchanges facilitated improvements in cost and quality via transparency, and served as a financial clearinghouse.

Principal functions of an HBE:

- Facilitate the purchasing of insurance by allowing consumers to find, compare, and purchase insurance from multiple companies
- Serve as a financial clearing house for premiums, subsidies for low income participants, and employer contributions, directing funds to the appropriate parties
- Facilitate improvements in cost and quality, through the transparency and comparability of competing products, prices, and quality ratings

1. Continued

General features of benefit plans that can be offered:

- Benefit plan must be “qualified” to sold on the Exchange and provide
- Essential benefits – supposed to those offered by a typical comprehensive employer insurance plan
- States have options they can use to define the benchmark plan
- Metal levels – defined by the actuarial plan value of their benefits
- Bronze (60% of APV), silver (70% of APV), gold (80% of APV), platinum (90% of APV), catastrophic

(b) Describe the three carrier risk management tools within an HBE.

Commentary on Question:

Most candidates recognized this subsection was testing knowledge of the “3 R’s” although some did not. Risk adjustment seemed to be the most well-known of the 3 and some candidates provided more detail than was necessary, possibly to compensate for a relative lack of knowledge on risk corridors and reinsurance. Overall candidates performed well on this subsection.

Reinsurance

- provides carriers with protection against high cost members
- temporary/transitional program for 2014-2016
- funded by payments from all health insurance carriers in individual and group markets, including self-insured plans through third party administrators
- reinsurance payments to insurance carriers in Individual market to cover some portion of claim cost above the attachment point

Risk Corridor

- temporary/transitional program 2014-2016
- provides carriers protection against total claims across all members being higher than expected
- a carrier will receive payments from the government if their cost-to-premium ratio is greater than 103%
- a carrier will make payments to the government if its cost-to-premium is less than 97%

Risk Adjustment

- a permanent program
- “a zero-sum game” across each market in each state
- lessen or eliminate the incentives for carriers to avoid sick enrollees or to attract a less risky membership
- carriers with healthier participants have to subsidize carriers with less healthy participants by making a transfer payment each year

1. Continued

- (c) Define eligibility requirements for ACA subsidies for individuals and explain how each is intended to lower individual purchasers' costs.

Commentary on Question:

Most candidates did well at defining the eligibility requirements, but the best responses clearly identified the two types of ACA subsidies, premium and cost-sharing, and explained how each lowered the individual purchasers' costs.

Cost Sharing Subsidy

- Available only for individuals with income below 250% of Federal Poverty Level (FPL) who must select a Silver metal plan from the exchange
- The benefits are adjusted to gross up Actuarial Value (AV) from 70% to 73% if 200%-250% of FPL, to 87% AV if 150%-200% of FPL, and to 94% AV if 100%-150% of FPL
- Premium rate for these eligible individuals remains at 70% AV level
- Federal government subsidizes the difference between 70% and the grossed-up AV
- This helps lower an individual's out-of-pocket expenses such as deductibles, copays, and coinsurance. There are three levels of cost sharing reduction depending on the household income level (up to 400% FPL)
- There is benefit design flexibility to achieve the right cost share level, a minimum requirement is adjusting the maximum out-of-pocket limit to \$2,250 for individuals at 100-200% FPL, and to \$5,200 for individuals at 200-250% FPL
- All cost sharing is zero for Native Americans below 300% FPL for all metal plans

Premium subsidies

- Available for qualified individuals and families with incomes between 100-400% of FPL for qualified coverage purchased through the Exchanges
- lesser of premiums paid and the excess of a benchmark over a percentage of household income
- the subsidy goes down as income increases until it reaches zero at 400% FPL
- Premium credits are tied to the second-lowest silver plan in the individual's geographic area – known as the benchmark plan

- (d) A common theory is that broad participation in HBE products across targeted populations is necessary for the ACA to be successful. Identify and explain the ACA provisions that may hinder participation in HBE products for population subgroups.

1. Continued

Commentary on Question:

Candidates did poorly on this subsection. The key here was the connection between ACA provision and how these may influence certain subpopulations (i.e. younger adults, children under age 26) to stay out of the HBE products. There were many lengthy answers that were not pertinent to the question.

- General belief is that premium subsidies have uniform and directionally appropriate effects across the general population
Reasons why younger healthy people may not choose to enroll in the HBEs
- Subsidies will primarily benefit older people as premium rates for younger are more likely to be considered “affordable” before a subsidy adjustment
 - Maximum premium contribution based on sliding scale of FPL – means greater premium subsidy to older people with higher age rated premiums
 - Younger will actually pay more for plans with APV less than silver
- Widely known ACA provision requires employers to allow children under age 26 to remain on their parents’ plans
- Age compression (3:1) of individual market premiums that discourages enrollment when compared to the premiums they would pay for off-exchange products
- Younger people currently rated on a steeper age curve (5:1 or 7:1) will have a greater propensity to keep their plan than older people.

2. 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.
6. Evaluate the impact of regulation and taxation on companies and plan sponsors in the U.S.

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.
- (5c) Apply applicable standards of practice.
- (6b) Describe the major applicable laws and regulations and evaluate their impact.
- (6c) Apply applicable standards of practice.

Sources:

ASOP 21

US GAAP – Chapter 2

Group Insurance – Chapter 45

Analysis for Financial Management – Chapter 4

US GAAP – Chapter 1

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Explain the responsibilities an actuary fulfills in relation to financial statements according to ASOP 21:
 - (i) As responding Actuary
 - (ii) As reviewing Actuary

2. Continued

Commentary on Question:

To receive full credit for this question it was necessary to include a robust response for each of the parties noted above. Simply providing a list of responsibilities would not receive credit. To receive full credit the candidate needed to explain at least two responsibilities for each of the parties listed above. Candidates tended to not provide enough commentary to receive full credit on question.

- (i) The actuary should be appropriately responsive to the auditor's or examiner's reasonable requests, as described below. The responding actuary may involve other actuaries in responding to the auditor or examiner.

Data, Assumptions, and Method s— The responding actuary should be prepared to discuss with the auditor or examiner the following items, based on existing documentation, underlying those elements of the financial statement for which the actuary is the responding actuary:

- (a) the data used;
- (b) the source of prescribed assumptions, if any;
- (c) the methods used; and
- (d) the basis for assumptions that are not prescribed assumptions.

Environmental Considerations — The responding actuary should be prepared to discuss with the auditor or examiner known circumstances that, in the actuary's professional judgment, had a significant effect on the preparation of those elements of the financial statement for which the actuary is the responding actuary. Examples of such circumstances may include the following:

- (a) changes in the operating environment;
- (b) trends in experience;
- (c) product or plan changes and changes in product mix or demographic mix;
- (d) changes in the entity's methods, policies, or procedures, or in statutory valuation bases; and
- (e) compliance with relevant new or revised accounting rules, laws and regulations, or other government promulgations.

Requests for Information — The responding actuary should be appropriately responsive to the auditor's or examiner's reasonable requests for other relevant information such as data, analyses, and sample calculations.

2. Continued

- (ii) The reviewing actuary has responsibility with respect to the planning and documentation of the audit or examination procedures, as described below.

Planning - The reviewing actuary should discuss the scope of the audit or examination with the auditor or examiner as well as the nature, extent, and timing of the reviewing actuary's procedures, including how the results of the review will be communicated. The reviewing actuary should inform the responding actuary or the entity about the expected timing of the audit or examination and request the information needed by the reviewing actuary to perform the planned procedures.

Documentation - in addition to the documentation requirements of ASOP No. 41, Actuarial Communications, the reviewing actuary's documentation should include the following:

- (a) evidence that the reviewing actuary's procedures have been planned and coordinated with the auditor or examiner;
- (b) a summary description of the items subject to the reviewing actuary's audit or examination procedures;
- (c) a summary description of the procedures followed by the reviewing actuary; and
- (d) a summary description of the results of the review, providing conclusions or findings.

Relationship with the Entity Whose Financial Statement is Being Audited or Examined— The responding actuary and the reviewing actuary should disclose to the auditor or examiner their relationships, if any, with the entity whose financial statement is being audited or examined.

Confidentiality—An audit or examination may give rise to the exchange of confidential information. Any information received by the reviewing actuary should be considered confidential, except as to the auditor or examiner, unless otherwise indicated by the entity. The reviewing actuary should take appropriate steps to preserve the confidentiality of such information.

- (b) Describe the role of the following organizations:
 - (i) The American Institute of Certified Public Accountants
 - (ii) The Financial Accounting Standards Board
 - (iii) The Securities and Exchange Commission

2. Continued

Commentary on Question:

Candidates needed to provide a detailed description to receive full credit. A basic explanation of each of the organizations listed above received half credit.

Candidates tended to provide a more basic explanation.

- (i) The AICPA is the association representing the accounting and auditing professions. (basic)
The AICPA has played a significant role in providing guidance to accountants and auditors in the conduct of their profession, including guidance on the proper application of accounting principles and practices. (specific)
 - (ii) The FASB is the primary accounting standard setter. (basic)
Under its purview, various pronouncements that have been issued continue to address the evolutionary aspects of financial accounting. (specific)
 - (iii) The SEC enforces the laws related to the Securities Act of 1933. (basic)
This organization regulates the securities markets and prescribes the form and content of financial statements that are filed with it. (specific)
- (c) For each of the organizations in (b):
- (i) Write down an example of a standard for financial reporting set by the organization and
 - (ii) Explain how that standard applies to the insurance industry.

Commentary on Question:

To receive partial credit a candidate needed to state specific examples of a standard for financial reporting for the organizations. For full credit the candidate needed to explain how the standard applies to insurance companies.

Candidates did not perform well on this question if they did not list specific standards created by the organizations.

AICPA – Some examples of standards this organization has set that a candidate might be able to relate to the insurance industry:

- APB Opinion No. 16 – “Business Combinations”
- APB Opinion No. 17 – “Intangible Assets”
- Practice Bulletin No. 8
- Practice Bulletin No. 15
- Industry Audit Guides

2. Continued

FASB – Some examples of standards this organization has set that a candidate might be able to relate to the insurance industry:

- SFAS No. 5 – “Accounting for Contingencies”
- SFAS No. 60 – “Accounting and Reporting by Insurance Enterprises”
- SFAS No. 97 – “Accounting and Reporting by Insurance enterprises for certain Long-Duration Contracts and for Realized Gains and Losses from the Sale of Investments”

SEC – Some examples of standards this organization has set that a candidate might be able to relate to the insurance industry:

- Regulation SX Section 210.7
- Staff Accounting Bulletins
- Financial statements like the 10-K, 10-Q, and 8-K

(d)

- (i) Restate the balance sheet to reflect the corrected liabilities.
- (ii) Goldfinger performed computer based forecasting to predict the impact of 2013 growth by adjusting the 2012 balance sheet. Create the proforma balance sheet for 2013 based on the following growth assumptions:
- (iii) Calculate the following metrics for both the restated balance sheet and the proforma projection. Assume the policy liabilities and policy assets are current.
 - ROE
 - ROA
 - Debt to assets
 - Debt to equity
 - Current ratio
- (iv) Compare the restated 2013 balance sheet to the proforma balance sheet from (ii) and describe the implications of any variance from plan.

Commentary on Question:

Candidates performed well on part (i) of question d. Common mistakes were to adjust total liabilities rather than claims unpaid. Another common mistake was to not apply the 30% adjustment as a multiplicative factor. Candidates needed to note or correct the imbalance that occurs as a result of adjusting claims unpaid. Candidates also performed well on part (ii). Candidates performed well on part (iii). A common mistake was to use Long-Term debt in the debt to asset ratios rather than Total Liabilities. Full credit was awarded to candidates who calculated the ratio correctly using miscalculated values from part (i) or (ii). Candidates tended to skip part (iv) or to not note the implications of the variance from plan.

2. Continued

- (i) The following example corrects the claims unpaid and would have required the candidate to note the out of balance. Another proper solution would be to reduce the retained earns by the amount by which the claims unpaid increased.

| | Case study | | Corrected | |
|---|----------------|-------|----------------|----------|
| | 12/31/2013 | | 12/31/2013 | |
| <u>Assets</u> | | | | |
| Current assets | 82,982 | | 82,982 | |
| Long-term investments | 9,524 | | 9,524 | |
| Net property, plant and equipment | 4,865 | | 4,865 | |
| Net Intangible assets | 31,969 | | 31,969 | |
| Total Assets | 129,340 | | 129,340 | |
| <u>Liabilities, Shareholder's Equity</u> | | | | |
| <u>Liabilities</u> | | | | |
| <u>Policy liabilities</u> | | | | |
| Claims unpaid | 16,965 | × 1.3 | 22,055 | 5,090 |
| Reserves for future policy benefits | 321 | | 321 | |
| Other policyholder liabilities | 4,789 | | 4,789 | |
| Total policy liabilities | 22,075 | | 27,165 | |
| Unearned Premium | 3,456 | | 3,456 | |
| Premiums received in advance | 18,014 | | 18,014 | |
| Long-term debt | 29,785 | | 29,785 | |
| Reserves for future policy benefits, noncurrent | 345 | | 345 | |
| Deferred tax liabilities, net | 3,129 | | 3,129 | |
| Payable for securities | 2,203 | | 2,203 | |
| Total liabilities | 79,007 | | 84,097 | |
| <u>Shareholder's Equity</u> | | | | |
| Common capital stock | 25,521 | | 25,521 | |
| Retained Earnings | 24,812 | | 24,812 | - |
| Total Shareholder's Equity | 50,333 | | 50,333 | |
| Total Liabilities and Owner's Equity | 129,340 | | 134,430 | 0 |

2. Continued

- (ii) The following is an example of the proper calculations of the proforma balance sheet

| | Case study | | Proforma |
|---|----------------|-------------|---------------------------|
| <u>Assets</u> | 12/31/2012 | adjustments | 12/31/2013 |
| Current assets | 86,983 | 30% | 113,078 |
| Long-term investments | 6,165 | 50% | 9,248 |
| Net property, plant and equipment | 5,187 | -8% | 4,772 |
| Net Intangible assets | 27,109 | | 31,679 |
| Total Assets | 125,444 | | 158,777 |
| | | | <i>rounding imbalance</i> |
| <u>Liabilities, Shareholder's Equity</u> | | | |
| <u>Liabilities</u> | | | |
| <u>Policy liabilities</u> | | | |
| Claims unpaid | 17,066 | 40% | 23,892 |
| Reserves for future policy benefits | 154 | 40% | 216 |
| Other policyholder liabilities | 5,746 | -4% | 5,516 |
| Total policy liabilities | 22,966 | | 29,624 |
| Unearned premium | 2,651 | 40% | 3,711 |
| Premiums received in advance | 14,904 | 40% | 20,866 |
| Long-term debt | 33,938 | -10% | 30,544 |
| Reserves for future policy benefits, noncurrent | 290 | 30% | 377 |
| Deferred tax liabilities, net | 4,524 | 40% | 6,334 |
| Payable for securities | 2,506 | -10% | 2,255 |
| Total liabilities | 81,779 | | 93,711 |
| <u>Shareholder's Equity</u> | | | |
| Common capital stock | 20,945 | 49% | 31,208 |
| Retained Earnings | 22,720 | 49% | 33,853 |
| Total Shareholder's Equity | 43,665 | | 65,061 |
| Total Liabilities and Owner's Equity | 125,444 | | 158,772 |
| | | | <i>rounding imbalance</i> |

- (iii) The following are the formulas needed to properly calculate the requested ratios. The ratio must have been calculated for both the rebalanced sheet as well as the proforma calculation
- $ROE = \text{net income} / \text{shareholder's equity}$
 - $ROA = \text{net income} / \text{total assets}$
 - $\text{Debt-to-Assets} = \text{total liabilities} / \text{total assets}$
 - $\text{Debt-to-Equity} = \text{total liabilities} / \text{shareholder's equity}$
 - $\text{Current Ratio} = \text{current assets} / \text{current liabilities}$

2. Continued

- (iv) Current assets are significantly lower on the restated balance sheet as compared to the proforma, as are deferred tax liabilities, common stock, and retained earnings. Thus, ROE is inflated, and business is riskier due to heavier reliance on debt rather than equity.

(Other reasonable responses were accepted. Candidates should have noted the difference in assets.)

- (e)
- (i) Calculate the sustainable growth rate and compare to actual growth. Show your work.
- (ii) Draft a memo proposing plans to maintain the current growth rate.

Commentary on Question:

Most candidates were able to correctly state an acceptable formula for sustainable growth rate, calculate its value, and calculate the actual growth. Partial credit was granted for candidates who provided a correct formula but were unable to use it appropriately.

To receive full credit for the memo the candidate must have compared the actual and sustainable growth rate, identified at least three plausible options, and proposed them with a cogent argument or potential shortcomings of the option. Most candidates only listed options.

- Sustainable growth rate (g^*) = change in equity \div equity at beginning of period
- Sustainable growth rate = P R A T
- Profit margin \times retention ratio \times asset turnover ratio \times Financial leverage (asset to equity)
- Sustainable growth rate = R \times ROE
- Sustainable growth rate = $g^* = 5,493 \div 43,665 = 12.6\%$
- Actual growth rate = $g = 203,083 \div 146,956 - 1 = 38.2\%$

2. Continued

Memorandum

To: CEO

From: Employee

Based on the current financial statements, the actual growth rate is greater than the sustainable growth rate. To remedy this situation we may choose to execute one or more of the following options:

- Sell new equity – The increased equity, plus whatever added borrowing it makes possible, becomes sources of cash with which to finance further growth. The company must be mindful of any upfront costs associated with issuing new equity.
 - Increase financial leverage – This option should be evaluated carefully. Increasing the leverage ratio raises the amount of debt the company can add for each dollar of retained profits.
 - Reduce dividend payout – A cut to dividends raises sustainable growth by increasing the proportion of earnings retained in the business. This is only an option when dividends are paid.
 - Outsource some of all of production – When a company outsources, it releases assets that would otherwise be tied up in performing the activity, and it increases its asset turnover. Both results diminish growth problems.
 - Increase prices – This may prove problematic with Medicare products so only minimal increases may be allowed.
 - Merge with a cash cow – this would help alleviate the need to raise debt or equity over time.
- (f) Draft a memo to the CFO as the responding Actuary describing the implications of restating the liabilities. Recommend next steps to correct any outstanding errors.

Commentary on Question:

Candidates were able to identify the problem and note potential next steps. Not all candidates noted possible implications of restating liabilities.

2. Continued

Memorandum

To: CFO

From: Responding Actuary

It has been recently identified that unpaid claims were understated by 30%. To correct this error an adjustment should be made to the balance sheet. We believe that unpaid claims should increase 30% accompanied with a reduction of retained earnings to keep assets and liabilities in balance. We believe a full review of the balance sheet and any projections that relied upon it should occur after this change has been made. We recommend notifying management of the proposed changes to be made as well as other users of the company financial statements.

Going forward, we believe that further internal auditing is necessary across all components of the balance sheet and additional financial statements.

- (g) List the other parties that may be impacted by changes to the financial statements.

Commentary on Question:

Candidates performed well on this question. They listed the necessary parties to receive full credit.

- Providers of capital
- Financial institutions
- Investment banks
- Private lenders
- Commercial banks
- Attorneys
- Actuaries
- Accountants
- Policyholders
- Future investors
- Creditors
- Anyone who is party of the company's transactions

3. 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:

The Handbook of Employee Benefits, Rosenbloom, Chapter 25

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) List the advantages of cafeteria plans to employees and employers.

Commentary on Question:

Candidates generally were able to identify the favorable tax treatment for both employees and employers on cafeteria plans and received partial credit for those answers. To receive full credit, additional advantages had to be listed.

Advantages to Employees

- Can pay for their share of benefits on a tax favored basis
- Specifically exempt from Federal Income Tax, FICA, FUTA
- Increases employee choice and flexibility

Advantages to Employers

- Payroll tax savings – no FICA or FUTA
- Deferral amounts not considered wages for purposes of workers comp premium and other expenses
- Helps employees conceptualize overall value of benefits
- Can help contain health care costs by reducing waste and duplication

- (b) Evaluate whether the Moonraker benefits pass the general tests that apply to cafeteria plans. Show your work.

Commentary on Question:

Most candidates correctly explained the key employee contribution test but did not include all non-taxable benefits in the calculation. Candidates generally only listed that test and failed to explain the other two tests. For those that did list all three applicable tests, very few completed the calculations correctly. To receive full credit, each of the three tests had to be listed, defined, and computed, with a statement of if it passed or failed. Candidates needed to refer back to some information in the case study to fully address the eligibility test.

3. Continued

The three general tests are:

1. Eligibility test – this test is passed
 - a. All FTEs are eligible for benefits after 30 days, so they meet the criteria of not having anyone wait more than 3 years
 - b. Satisfy the prescribed safe harbor percentage
2. Contribution and benefit test – this test is passed based on the criteria below
 - a. The total benefits as a % of HCE employees must be less than total benefit as % of non HCE

| Total Benefits as % of Compensation - must not be higher for HCEs than for non-HCEs | | | |
|---|--------------|---------------|--------|
| | Compensation | Total Benefit | % |
| HCE / Key | 98,499,500 | 12,624,171 | 12.82% |
| Other FT | 692,529,000 | 90,390,862 | 13.05% |

Passes since 12.82% < 13.05%

- b. The ER contributions as a % of HCE salary must be less than employer contributions as % of non HCE

| Employer Contributions as % of Compensation - must not be higher for HCEs than non-HCEs | | | |
|---|--------------|-----------------|--------|
| | Compensation | ER Contribution | % |
| HCE / Key | 98,499,500 | 8,880,396 | 9.02% |
| Other FT | 692,529,000 | 83,581,125 | 12.07% |

Passes since 9.02% < 12.07%

- c. Health coverage contributions are OK since ER contributions are always 100%
 3. Key employee concentration test – this test is passed
 - a. Non-taxable benefits to key employees cannot exceed 25% of aggregate benefits to all employees

| | Non-Life Benefits | Total Life | % < 50K | Life \$ < 50K | Total Non-taxable |
|---------------|-------------------|------------|---------|-------------------|-------------------|
| Key Employees | 1,156,227 | 1,724,580 | 22% | 379,408 | 1,535,635 |
| HCE (non-Key) | 4,663,076 | 5,080,288 | 28% | 1,422,481 | 6,085,557 |
| All Other FTE | 77,094,305 | 13,296,557 | 84% | 11,169,108 | 88,263,413 |
| Total | 82,913,609 | 20,101,424 | | 12,970,996 | 95,884,605 |
| | | | | Key as % of Total | 1.6% |

Passes since 1.6% < 25%

3. Continued

- (c) The newly appointed benefits director is considering the following:
- (i) Implementing employee contributions on health care coverage for all employees
 - (ii) Offering life insurance at 2.0 times annual salary to its full-time research chemists, inspectors, and biostatisticians

Explain the potential implications of these actions to the Moonraker cafeteria plan's qualification.

Commentary on Question:

Candidates were expected to respond with impacts specifically to Moonraker cafeteria plan's qualification (the tests mentioned in part B) rather than describe general consequences of these changes. A few candidates were able to explain the implications of these two changes relative to the qualification tests, though most listed effects on the employees instead. Since the question asked to explain, a list was not sufficient.

For change (i), Moonraker will need to ensure that the health plan contributions are not discriminatory by meeting one of the following two criteria:

- 100% of cost of health benefits coverage under the plan of the majority of highly compensated participants who are similarly situated
- 75% of the cost of the most expensive health benefits coverage elected by any similarly situated participants

For change (ii), Moonraker needs to be cautious about offering richer benefits to these employees who are likely to be HCEs

- Already close to not passing the contributions and benefits test, so additional benefits to HCEs could cause failure
- Moonraker's plan to hire more of these employees could further increase the impact of this

4. 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 Ins, Ch 25, page 404-405

Bluhm Ch 25

Rosenbloom Ch21 - Medicare Part D Prescription Drug Benefits p537-p541

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Describe the Gross Value Test and Net Value Test and how the results impact employers and employees.

Commentary on Question:

Candidates were generally successful in describing both tests and providing potential impacts to the employer and the employee.

The Gross Value Test examines whether the plan's PDP benefit provides coverage that is, on average, at least as rich as standard Part D coverage.

The Net Value Test examines whether the portion of the group health plan benefit subsidy offered by the plan sponsor is at least as much or greater than the subsidy offered by CMS.

In the event both tests fail and do not meet CMS requirements:

- Employer will not be eligible for the RDS
- Employees will have to pay a penalty and potentially pay more in out of pocket costs

- (b)
 - (i) Calculate the results of the Gross Value Test and Net Value Test for Azure and Argento. Show your work.
 - (ii) Outline a memo that summarizes the results of the Gross and Net Value Tests and discusses potential remedies.

4. Continued

Commentary on Question:

Candidates were generally successful in making the necessary calculations in order to perform the gross and net value tests for Azure and Argento.

Common mistakes made by candidates included a miscalculation of the plan cost distribution or forgetting to annualize the monthly premium before subtracting it from the gross value.

For the memo outline, most candidates did well in summarizing the results from their calculations and were able to identify a potential remedy.

(i)

| Claims Range | Frequency | Average Claim | Plan Cost | | |
|--------------|-----------|---------------|---------------|----------------------------------|-------------------------------------|
| | | | Standard Plan | Azure | Argento |
| 0-200 | 0.15 | 80 | 0 | 0 | 0 |
| 200-320 | 0.05 | 275 | 0 | $(275-200) \times (1-0.2) = 60$ | 0 |
| 320-750 | 0.25 | 410 | 55 | $(410-200) \times (1-0.2) = 168$ | $(410-320) \times (1-0.25) = 68$ |
| 750-4500 | 0.35 | 980 | 530 | $(980-200) \times (1-0.2) = 624$ | $(980-320) \times (1-0.25) = 495$ |
| 4500-6000 | 0.15 | 5350 | 3580 | $(5350-1060) = 4290$ | $(5350-320) \times (1-0.25) = 3773$ |
| 6000+ | 0.05 | 7900 | 7180 | $7900-1060 = 6840$ | $7900-1740 = 6160$ |

Medicare Standard Plan:

- Gross Value = $0 \times 0.15 + 0 \times 0.05 + 55 \times 0.25 + 530 \times 0.35 + 3580 \times 0.15 + 7180 \times 0.05 = \1095
- Net Value = $\$1,095 - 23.25 \times 12 = \816

Azure:

- Gross Value = $0 \times 0.15 + 60 \times 0.05 + 168 \times 0.25 + 624 \times 0.35 + 4290 \times 0.15 + 6840 \times 0.05 = \1249
- Gross Value: Pass, $\$1249 > \1095
- Net Value = $\$1249 - 25 \times 12 = \949
- Net Value: Pass, $\$949 > \816

4. Continued

Argento:

- Gross Value = $0 \times 0.15 + 0 \times 0.05 + 68 \times 0.25 + 495 \times 0.35 + 3773 \times 0.15 + 6160 \times 0.05 = \1064
- Gross Value: Fail, $\$1064 < \1095

- Net Value = $\$1064 - 0 * 12 = \1064
- Net Value: Pass, $\$1064 > \816

(ii) Azure passes both the gross value and the net value tests. Argento failed the gross value test, but passed the net value test. As a result, the company will not qualify for the RDS. A possible remedy to consider would be modifying the Argento plan benefits, such as reducing the deductible, coinsurance or out of pocket maximum. Or, the company could also consider if any adjustments might be warranted to the experience for any expected changes in utilization.

(c) Describe alternatives to an employer-funded PDP including advantages and disadvantages of each.

Commentary on Question:

Candidates were generally able to identify alternatives to the employer-funded PDP and provide respective advantages and disadvantages. Additional relevant alternatives were accepted, beyond those listed in the model solution.

Alternatives could include:

- Offer a Medicare Advantage plan that includes both prescription drug and health coverage
 - Advantages
 - Cost savings since third party can be more efficient
 - Less administrative burden
 - Disadvantages
 - Third party administrative fee could be high
 - Possible disruption to existing network

- 800 Series EGWP is an option where employers can contract with CMS using a third-party Part D sponsor
 - Advantages
 - Cost savings and tax savings
 - No regulatory burden and risk avoidance

4. Continued

- Drop coverage altogether
 - Advantages
 - No cost, risk, regulatory burden or administrative overhead
 - Disadvantages
 - Employees may not appreciate this option
- (d) Assess the potential merits of the EGWP Part D plan relative to Brentwood's existing arrangement.

Commentary on Question:

Candidates were generally able to provide merits of an EGWP Part D plan, but were not successful in discussing merits of the existing arrangement. The question asked candidates to assess the two plans (EGWP and existing) relative to each other.

- Merits of EGWP plan:
 - EGWP may be tailored to the group's needs
 - Admin functions are no longer a hassle
 - Insulation against catastrophic risk
 - Direct monthly subsidy from CMS
- Merits of existing arrangement:
 - No disruption to existing pharmacy network
 - No disruption to list of pharmacy drugs covered
 - Coordination of care because both health and pharmacy coverage is provided by one carrier

5. Learning Objectives:

5. The candidate will understand how to prepare and interpret insurance company financial statements in accordance with IFRS & IAS.

Learning Outcomes:

- (5a) Interpret insurer financial statements from the viewpoint of various stakeholders.
- (5c) Project financial outcomes and recommend strategy to senior management to achieve financial goals.

Sources:

Group Insurance, Chapter 45, P745 to P768

Commentary on Question:

The focus of this question is to test whether the candidate has good understanding of the ROE and its components, and whether the candidate can apply DuPont formula given certain key information.

Solution:

- (a)
- (i) Define the DuPont formula used to analyze enterprise growth.
- (ii) Describe the purpose of each of its components.

Commentary on Question: *Candidate must identify the DuPont formula and its components. The candidate must also be able to describe the purpose of each component.*

$$\begin{aligned} \text{ROE} &= \frac{\text{Net Income}}{\text{Shareholder Equity}} \\ &= \frac{\text{Total Asset}}{\text{Shareholder Equity}} \times \frac{\text{Net Income}}{\text{Total Asset}} \\ &= \frac{\text{Total Asset}}{\text{Shareholder Equity}} \times \frac{\text{Net Income}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Total Asset}} \end{aligned}$$

- (1) Total Asset Turnover (Revenue / Total Asset) - It is a measure of much *total* investment (such as real estate, information systems, and perhaps medical equipment, funded by equity and debt), is required to meet the requirements of this business.

5. Continued

- (2) Profit Margin (Net Income / Revenue) - It is a measure of to what degree can the enterprise be operated using investors' investment/money.
- (3) Return on Assets (Net Income / Total Asset) - It is a measure of the level of profits, expressed as a percent, that can be earned on the assets of the enterprise as a whole.
- (4) Total Leverage Ratio (Total Asset / Shareholder Equity) - It is a measure of how fast the enterprise's net worth grows, assuming reinvestment of all earnings. It is also a measure of the limit of how much the enterprise can grow without external investment.

- (b) Recommend an investment choice. Justify your response and show your work.

Commentary on Question: *Candidate must provide a clear recommendation and show calculation to support such recommendation. As "profit margin" is the most familiar metric used by financial analysts, this metric must be considered as part of the decision making process. Candidates who only used ROA as a metric will be given part marks. Calculation for each metric must be included.*

Company A

$$\text{Revenue} = \text{Total Asset} \times \text{Asset Turnover Ratio} = \$5,000 \times 10\% = \$500$$

$$\text{Equity} = \text{Total Asset} / \text{Leverage Ratio} = \$5,000 / 2.5 = \$2,000$$

$$\text{Net Income} = \text{ROE} \times \text{Equity} = 5.0\% \times \$2,000 = \$100$$

$$\text{Profit Margin} = \text{Net Income} / \text{Revenue} = \$100 / \$500 = 20.0\%$$

Alternative Profit Margin Calculation for Company A

$$\text{Profit Margin} = \text{ROE} / (\text{Asset Turnover Ratio} \times \text{Leverage Ratio})$$

$$\text{Profit Margin} = 5\% / (10\% \times 2.5) = 20\%$$

Company B

$$\text{Net Income} = \text{ROA} \times \text{Total Asset} = 1\% \times \$150,000 = \$1,500$$

$$\text{Profit Margin} = \text{Net Income} / \text{Revenue} = \$1,500 / \$15,000 = 10.0\%$$

Recommendation

Because Company A has a much higher Profit Margin, Company A is proposed.

6. 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:

Fundamental of Retiree Group Benefits chapter 7 and chapter 9

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Describe assumptions that impact retiree group benefits.

Commentary on Question:

In order to obtain full mark, candidates are expected to list at least 8 out of the following 18 items and provide some description to each item. .

1. Inflation
2. Investment rate of return
3. Discount Rate
4. Salary Increase
5. Termination / turnover
6. Mortality
7. Disability
8. Retirement Incidence
9. current retiree plan costs
10. current retiree contributions
11. Health care cost trend rate
12. Medicare Part B premium increase
13. PPACA Excise Tax (2nd Ed Only)
14. Retiree contribution increase
15. Plan participation
16. Spouse plan continuation after death of retiree
17. Dependent children plan termination
18. Health plan options (if not considered in plan costs above)

6. Continued

- (b) Calculate the net periodic postretirement benefit cost for Burrard Company for 2013.

Commentary on Question:

(i) Service cost should be zero for fully eligible individuals.

(ii) For interest cost calculation, benefit payments are assumed to be made midway during the year.

(iii) For return on plan asset calculation, benefit payments are assumed to be made midway during the year

Service Cost Calculation

| Service Time | Employees | Annual Service Cost | Total Service Cost |
|--------------|-----------|---------------------|--------------------|
| 0 years | 100 | \$25,000 | \$2,500,000 |
| 5 years | 200 | \$30,000 | \$6,000,000 |
| 10 years | 300 | \$40,000 | \$12,000,000 |
| 20 years | 400 | \$50,000 | \$20,000,000 |
| 30 years | 500 | \$60,000 | \$0 |
| TOTAL | | | \$40,500,000 |

Service Cost = \$40,500,000

Interest Cost Calculation

Interest Cost = $(\$500,000,000 + \$40,500,000) * 5\% - 1,000,000 * 5\% * 0.50 = \$27,000,000$

Return on Plan Assets Calculation

Return on plan assets = $\$3,000,000 * 0.07 - \$1,000,000 * 7\% * 0.50 = \$175,000$

Amortization of Transition Obligation

6. Continued

First, need to calculate the average remaining years until retirement:

| Service Time | Employees | Years until Retirement | Total Years until Retirement |
|--------------|-----------|------------------------|------------------------------|
| 0 years | 100 | 40 | 4,000 |
| 5 years | 200 | 35 | 7,000 |
| 10 years | 300 | 30 | 9,000 |
| 20 years | 400 | 20 | 8,000 |
| 30 years | 500 | 10 | 5,000 |
| TOTAL | 1,500 | | 33,000 |
| AVERAGE | | | =33,000 / 1,500 = 22 |

Amortization of Transition Obligation

$$= \text{Transition Obligation} / \text{Average Remaining Years until Retirement}$$

$$= \$500,000 / 22 = \$22,727$$

Solution based on 1st Edition of the textbook.

| | | |
|---|---|---------------------|
| | Service Cost | \$40,500,000 |
| + | Interest Cost | \$27,000,000 |
| - | Return on Plan Assets | \$175,000 |
| + | Amortization of Transition Obligation | \$22,727 |
| + | Net Amortization and Deferral | \$0 |
| = | Net periodic post-retirement benefit cost | \$67,347,727 |

Solution based on 2nd Edition of the text book.

| | | |
|---|---|---------------------|
| | Service Cost | \$40,500,000 |
| + | Interest Cost | \$27,000,000 |
| - | Return on Plan Assets | \$175,000 |
| + | Amortization of Transition Obligation | \$22,727 |
| + | Amortization of gain / (loss) | \$0 |
| + | Amortization of prior service cost | \$0 |
| = | Net periodic post-retirement benefit cost | \$67,347,727 |

(c) Calculate the following:

- (i) Gross Trend
- (ii) Paid Trend

Explain the differences in results. Show your work.

6. Continued

Commentary on Question:

Candidates should note the trends are different due to the leveraging effect of member cost-sharing.

(i) Gross Trend = 2015 Allowed Cost / 2014 Allowed Cost = $(1400 + 5000 + 200) / (100 + 100 + 1200) - 1 = \mathbf{371\%}$

(ii) Net Costs:

a. 1/1/2014: \$0 net cost (Deductible); 6/1/2014: \$0 net cost (Deductible)

b. 9/1/2014: $80\% * (\$1200 - \$300 \text{ [remaining deductible]}) = \720

c. 3/1/2015: $80\% * (\$1400 - \$500 \text{ [deductible]}) = \720

d. 7/1/2015: $\$5000 - \$250 * 4 = \$4000$

e. 12/1/2015: $\$200 - \$25 = \$175$

Net Trend = $(\$720 + \$4000 + \$175) / (\$720) - 1 = \mathbf{580\%}$

7. 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-809-15, MMRR 2014: Volume 4, Number 3

HHS-HCC Risk Adjustment Model for Individual and Small Group Markets under ACA (E3-E9, E18-E27, exclude exhibits except 10)

Commentary on Question:

Candidates generally performed well in part (a). For part (b), many candidates did well on the calculations of the relative plan liability factors, but only few candidates multiplied the factors calculated in step 1 by the induced demand factor. Very few candidates calculated the numerator correctly and even fewer calculated the denominator correctly.

Solution:

- (a) Describe criteria HHS uses to assess which specific hierarchical condition categories (HCCs) are included in the HHS risk adjustment model.

Criterion 1: represent clinically-significant, well-defined and costly medical conditions that are likely to be diagnosed, coded and treated if they are present

Criterion 2: are not especially subject to discretionary diagnostic coding or “diagnostic discovery” (enhanced rates of diagnosis through screening not motivated by improved quality of care).

Criterion 3: do not primarily represent poor quality or avoidable complications of medical care

Criterion 4: identify chronic, predictable, or other conditions that are subject to risk selection, risk segmentation, or provider network selection, rather than random acute events that present insurance risk

- (b) Calculate each individual’s plan liability risk score (PLRS) and the plan average PLRS. Show your work.

7. Continued

Commentary on Question:

There are two common mistakes:

- 1. Multiplied all the factors rather than adding up*
- 2. For enrollment 8, missed the additional factor for age*

Step 2: Candidates generally failed to apply the induced demand factor to the numbers calculated in Step 1

Step 3: Most candidates know only 1 enrollment month for Enrollee 8, but only a handful of candidates got full points due to the incorrect calculations in the previous steps.

Step 4: Only few candidates get this one right. Most candidates counted the infant, Enrollee 8, in the denominator.

Add up all the relative plan liability factors (based on metal level)

- Enrollee 1 = gold (Male age 58) + (adult, chronic hep) + (adult, CHF) = $0.736+1.228+3.648=5.612$
- Enrollee 2 = bronze (Female 27) = 0.156
- Enrollee 3 = silver (Male 40) + (adult, diabetes) = $0.293+1.120=1.413$
- Enrollee 4 = silver (Female 38) + (adult, completed pregnancy) = $0.490+3.134=3.624$
- Enrollee 5 = silver (Female 14) = 0.095
- Enrollee 6 = silver (Male 12) + (child, asthma) = $0.110+0.354=0.464$
- Enrollee 7 = silver (Male 6) + (child, autistic disorder) = $0.064+1.372=1.436$
- Enrollee 8 = silver (Male infant 0) + (age 0, premature, severity 2) = $0.574+7.967=8.541$

Multiplying the sum of each by induced demand factor (based on metal level)

- Enrollee 1 PLRS = $5.612 \times 1.07 = 6.005$
- Enrollee 2 PLRS = $0.156 \times 1.15 = 0.179$
- Enrollee 3 PLRS = $1.413 \times 1.12 = 1.583$
- Enrollee 4 PLRS = $3.624 \times 1.12 = 4.059$
- Enrollee 5 PLRS = $0.095 \times 1.12 = 0.106$
- Enrollee 6 PLRS = $0.464 \times 1.12 = 0.520$
- Enrollee 7 PLRS = $1.436 \times 1.12 = 1.608$
- Enrollee 8 PLRS = $8.541 \times 1.12 = 9.566$

7. Continued

Numerator

Calculate the plan average PLRS which is defined as the plan's weighted average of individual PLRSs, where the weights are enrollment months.

When the plan average PLRS is calculated, all plan enrollees are counted in the numerator

$$(6.005 \times 12) + (0.179 \times 12) + (1.583 \times 12) + (4.059 \times 12) + (0.106 \times 12) + (0.520 \times 12) + (1.608 \times 12) + (9.566 \times 1) = \mathbf{178.286}$$

Denominator

Only billable plan enrollees [parents (Enrollees 3, 4) and the three oldest children (Enrollees 5-7)] are counted in the denominator

$$12 + 12 + 12 + 12 + 12 + 12 + 12 = \mathbf{84}$$

$$\text{Plan Average PLRS} = 178.286 / 84 = \mathbf{2.122}$$

8. 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.
- (4c) Describe benefits and eligibility requirements for Medicaid and Children's Health Insurance Program (CHIP).

Sources:

Essentials of Managed Health Care, Kongstvedt, 6th Edition Ch 25 Medicaid Managed Health Care

Payment Reform Under the Medicare-Medicaid Financial Alignment Demonstrations, Health Watch, May 2013

Commentary on Question:

This question dealt with the dual eligible population. The responses were derived from the material covering dual eligibles. The context of this question is very important. Many candidates attempted to answer with general Medicaid or Medicare information which missed the dual eligible context of the question.

Solution:

- (a) Outline the different approaches available to integrate Medicaid with Medicare.

Commentary on Question:

Many candidates attempted to answer this question using methods of integrating employer coverage with Medicare (ie. Exclusion, Carveout, COB) which was the incorrect context.

Capitated Model

- Three way contract between state, CMS and health plan.
- Health plan gets prospective capitation payments based on anticipated savings from the integrated plan
- Health plan is responsible for fully integrating care
- CMS and states get to share in savings up front.

Managed Fee for Service

- State is responsible for integrating care
- States get to share in savings on a retrospective basis with CMS

Medicare Wrap

- Allows for MCR to assume financial responsibility for certain MCD plans
- Improves coordination and reduces administrative burdens

8. Continued

- (b) Describe the challenges posed by the dual eligible population in a managed Medicaid environment.

Commentary on Question:

Many candidates attempted to answer using barriers that can affect access to care for Medicaid members (ie. physician payment and supply and social determinants). The context of this question was related to dual eligible members not just challenges specific to Medicaid.

- MCR is funded and regulated outside of state control.
 - 21% of MCR are eligible for MCD, but 60% of ABD are dual eligible meaning a bigger problem for the states than the Feds.

 - Benefit design
 - MCD is responsible for any MCD benefits outside of MCR benefits.
 - State doesn't have to pay for acute benefits, but is responsible for cost share amounts on MCR benefits.

 - MCD/MCR operate as parallel systems with little interaction.
 - The state can be unaware of services provided where MCR is primary.
 - Leads to more reliance on LTC since the state can't intervene earlier.

 - Many MCR beneficiaries do not become eligible for MCD until an acute episode occurs.
 - Acute admission followed by nursing home without resources leads to MCD application.
 - This limits their ability to return to a less restrictive environment and becomes permanent solution.

 - MCR/MCD managed and regulated by CMS in a silo structure.
 - Independent regulatory requirements affect all parties involved.
 - Two unique processes for enrollment, grievances/appeals, member materials etc.
 - Beneficiaries need to manage two systems even though benefits are intertwined.
 - Little incentive to encourage cooperation and integration.
- (c) Explain how the state could achieve the objectives of reducing costs and improving health outcomes for the dual eligible population.

Commentary on Question:

This came straight out of the Payment Reform study note on MCR MCD demonstrations.

8. Continued

1. Better coordination of acute care
 - a. Currently covered primarily by MCR with MCD paying ded and cost sharing.
 - b. This means limited incentive for MCD to better coordinate care since savings will go to MCR.
 - c. Savings come from:
 - i. Coordinated treatment of multiple chronic conditions.
 - ii. Providing care in the most appropriate setting.
 - iii. Reduce/eliminate unnecessary tests/procs.
 - iv. Improved management of ambulatory sensitive admissions which reduces avoidable ER and IP visits.
2. Better coordination of behavioral health
 - a. Currently shared between MCR and MCD
 - b. Savings come from:
 - i. Improved coordination between services covered by MCR vs. those covered only by MCD.
 - ii. Emphasis on community based care.
3. Delay entry into LTC
 - a. Currently, primarily covered by MCD.
 - b. Savings come from:
 - i. Increased use of home/community based services.
 - ii. Discouraging unnecessary IP admissions.
 - iii. Health plan will have the incentive to modify contracting/coordination to reduce IP admissions from the facilities.
4. Decrease PMPM admin costs
 - a. Savings come from:
 - i. Increased enrollment and fixed expense leveraging.
 - ii. Potentially reduced marketing costs.
 - iii. Integrated MCD and MCR appeals processes.

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:

- (1a) Describe typical organizations offering these coverages.
- (2b) Develop an experience analysis.
- (2d) Calculate and recommend a manual rate.
- (2g) Apply actuarial standard of practice in evaluating and projecting claim data.

Sources:

Group Insurance, Ch. 31 and 33; Essentials of Managed Health Care, Ch. 22; GHC-105-14; Case Study

Commentary on Question:

The question is designed to test the candidate's knowledge of pharmacy plan pricing and develop a credibility weighted premium PMPM.

Solution:

- a)
 - (i) Calculate the expected 2016 prescription drug claim costs under the proposed PBM contract terms.
 - (ii) Quantum's objective is to have 2016 prescription drug claim costs to be no higher than expected under the existing PBM contract terms. Calculate the number of scripts that would have to be shifted from preferred brand to generic to meet this objective.

Show your work.

Commentary on Question:

In general candidates did well on this part of the question; however there were a few common points of confusion such as when to apply credibility weighting, what is included in the drug claims (e.g. dispensing fee, discount) and how to determine the number of scripts to shift from preferred brand to generic.

9. Continued

Candidates approached part (i) in two different ways. Some candidates used the average wholesale price (AWP) from the case study directly and others derived it from the data provided in the problem. Both were considered satisfactory approaches. Depending on what level and where the candidate rounded, the total claim cost could vary by a few thousand. Rounding was taken into consideration when evaluating the candidate's results.

| 2014 | | | | | | | |
|-----------|----------------|---------|------------------|-------------------|--------------------|----------|-----------------------------------|
| | (1) | (2) | (3) = (1)/(2) | (4) | (5) = (3) - (4) | (6) | (7) = (5)/ [1 - (6)] AWP |
| | Drug Claims | Scripts | Cost/Script t | Dispensing Fee | Ingredient Cost | Discount | |
| Generic | \$10,600 | 800 | \$13.25 | \$2.00 | \$11.25 | 75% | \$45 |
| PB | \$15,200 | 100 | \$152.00 | \$2.00 | \$150.00 | 25% | \$200 |
| Non PB | \$15,100 | 75 | \$201.33 | \$2.00 | \$199.33 | 15% | \$235 |
| Specialty | \$60,800 | 25 | \$2,432.00 | \$2.00 | \$2,430.00 | 10% | \$2,700 |

| 2016 | | | | | | |
|-----------|--|------------------------------------|--|------------------------------|--------------------|---------------------|
| | (8) | (9) = (7) * (8) | (10) | (11) = (9)/ [1 - (10)] | (12) | (13) = (11)+(12) |
| | Cost Trend (1.05 ²) | AWP | Discount | Ingredient Cost | Dispensin g Fee | Cost/Script t |
| Generic | 1.103 | \$50 | 80% | \$9.92 | \$2.25 | \$12.17 |
| PB | 1.103 | \$221 | 20% | \$176.40 | \$2.25 | \$178.65 |
| Non PB | 1.103 | \$259 | 10% | \$232.69 | \$2.25 | \$234.94 |
| Specialty | 1.103 | \$2,977 | 5% | \$2,827.91 | \$2.25 | \$2,830.16 |
| | (14) Utilization Trend (1.0125 ²) | (15) = (2) * (14) Scripts | (16) = (13) * (15) Total Claim Cost | | | |
| Generic | 1.025 | 820 | \$9,983 | | | |
| PB | 1.025 | 103 | \$18,314 | | | |
| Non PB | 1.025 | 77 | \$18,064 | | | |
| Specialty | 1.025 | 26 | \$72,534 | | | |
| | | | \$118,895 | | | |

9. Continued

- (ii) Difference in Contract Terms = $(\$118,895 - \$115,000) = \mathbf{\$3,895}$
Brand versus Generic Cost Difference = $\$178.65 - \$12.17 = \mathbf{\$166.48}$
Number of Scripts to Shift = $\$3,895 / \$166.48 = 23.4$ rounds to **24**
- (b) Calculate the 2016 prescription drug premium under the proposed PBM contract terms, assuming no shift in utilization. Show your work.

Commentary on Question:

In general candidates did well on this part of the question.

Credibility Factor = $\text{SQRT}(2,400/18,000) = \mathbf{36.5\%}$

2016 Cost PMPM = 2016 Claims / Member Months = **\$49.54**

2016 Manual Rate = **\$45.00**

Blended Cost PMPM = $.365 * \$49.54 + (1-.365) * \$45.00 = \mathbf{\$46.66}$

Retention Expenses = **18%**

2016 Premium PMPM = $\$46.66 / (1-.18) = \mathbf{\$56.90}$

10. 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

3. Evaluate and recommend an employee benefit strategy.

Learning Outcomes:

- (1a) Describe typical organizations offering these coverages.

Sources:

McKay Chapter 16

Bluhm Chapters 3 and 5

GH-101-13

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Describe elements that contribute to the potential for adverse selection for LTD plans, with respect to:
- (i) Plan design
 - (ii) Characteristics of employers
 - (iii) Characteristics of employees

Commentary on Question: *Candidates did well in describing drivers of anti-selection. Many answers were awarded credit even if they were not listed below, but the model solution is an example of a response that would have received full credit.*

10. Continued

- (i) Plan Design
Rich benefits contribute to adverse selection, such as:
 - Shorter elimination period
 - Low taxability of benefit (contributory)
 - High % of salary/income (e.g., over 60%)
 - Liberal definition of disability (any occ vs. own occ/specialty own occ)
 - High maximum monthly benefit
 - All sources integration is a rich benefit relative to direct integration or carveout

- (ii) Characteristics of employers
 - Industry: some industries may be more hazardous, and lend themselves to adverse selection
 - Occupation: the more physically demanding a particular occupation is, the more likely a disability will prevent a return to work and thus be a more costly claim
 - Company size: Smaller companies tend to have more adverse selection due to owner/employee's knowledge of own condition and/or that of employees

- (iii) Characteristics of employees
 - Age mix influences claim costs
 - Income distribution influences claim costs
 - Gender mix influences claim costs

- (b) Describe general approaches to control adverse selection in flexible benefit plans.

Commentary on Question: *The answer below is an example of a response that would have received full credit. Other items were acceptable if they related to plan design or pricing.*

Plan Design:

- Level spread between options – wide differences increase adverse selection; may do core with buy-up or maximum benefit cap to reduce risk.
- Limit frequency of choice – limit how frequently one can move in/out of predictable coverages, like dental and vision. Longer time periods required in a coverage option reduce predictability.
- Limit degree of change – only allow change of level per year or only allow change in one direction or require multi-year commitment.
- Group coverages together (e.g., group LTD with dental)
- Require proof of insurability when increasing coverage.
- Delay payment – don't provide full benefit until enrolled 6-12 months.

10. Continued

- Maintain parallel design – Group coverages that are prone to selection with all other coverage options, e.g., group orthodontia with all dental coverage options, or group vision (or pharmacy) with all medical coverage options.

Pricing:

- Raising price of highest option – so employees staying in that option must pay more to get same coverage. (allocate all adverse selection costs to highest option). This may result in buy-downs of healthier lives, but they may still end up saving the plan money because the cheaper options may have more cost-sharing & deductibles. Still, risks EE dissatisfaction. Can lead to phase out of expensive option as price becomes prohibitive charge more for most risky option
 - Raising prices of lower options – to discourage healthy lives from buying down coverage (reduce reward of buying down)
 - Risk-based pricing – price options according to expected cost. Common with life insurance, where probability of claim is directly related to age. (Flat rate would result in older risks buying more and younger risks buying less). Disability costs are also age-related (in part). But unlike group life, disability insurance is usually charged as a flat rate (based on an EE census).
 - ER subsidy to encourage participation – encourages broad spread of risk through higher overall participation. Better to have all employees in some kind (high, low) of (dental, vision) coverage rather than just those who need it most.
 - Spreading cost of adverse selection over all options.
 - Anticipating adverse selection in pricing – one must anticipate some degree of selection and choose how much to reflect in pricing.
- (c) Calculate the after-tax replacement ratio for Faye and Fred. Assume employee contributions are paid with post-tax dollars. Show your work.

Commentary on Question: *Candidates generally calculated after tax salary and benefit amounts without much difficulty. However, many candidates did not apply taxes to the disability income correctly, as benefits are taxable in direct proportion to the share that is paid for by the employer.*

10. Continued

$$\text{After tax replacement ratio} = \frac{\text{After tax disability income}}{\text{After tax salary}}$$

| | Faye | Fred |
|-----------------------------|--------------------------------------|--------------------------------------|
| Gender | Female | Male |
| Age | 57 | 32 |
| Plan | 1 | 2 |
| Annual salary | \$84,000 | \$56,000 |
| Tax rate | 35% | 30% |
| Monthly after-tax salary | $\$84,000 * (1-0.35)/12 =$ | $\$56,000 * (1-0.3)/12 =$ |
| | \$4,550.00 | \$3,266.67 |
| Benefit percent | 50% | 80% |
| Maximum benefit | \$3,500 | \$5,000 |
| Monthly Benefit | $\min(\$3,500, 0.5 * \$84,000)/12 =$ | $\min(\$5,000, 0.8 * \$56,000)/12 =$ |
| | \$3,500.00 | \$3,733.33 |
| % Premium Paid by ER | 100% | 80% |
| Taxable Portion of Benefit | $\$3,500 * 100% =$ | $\$3,733 * 80% =$ |
| Monthly | \$3,500.00 | \$2,986.67 |
| Annual | \$42,000.00 | \$35,840.00 |
| Disability Income Tax Rate | 25% | 25% |
| Tax on Monthly Benefit | \$875.00 | \$746.67 |
| After Tax Disability income | \$2,625.00 | \$2,986.67 |
| After tax replacement ratio | 57.7% | 91.4% |

- (d) Management is investigating the possibility of leaving Plan 1 premiums unchanged, and applying the required premium increase to Plan 2 only. Derive the required percentage premium increase for Plan 2 if the Plan 1 premium rate remains unchanged. Assume Faye, Fred, John and Morgan are the only employees. State any assumptions and show your work.

Commentary on Question: Candidates that did not use benefits as the basis for their premium increase were awarded partial marks if they carried out the following steps on a different basis (salary, for example). It was not necessary to show every dollar calculation to receive full credit.

10. Continued

| | Faye | Fred | John | Morgan |
|--|---|---|---|---|
| Gender | Female | Male | Male | Female |
| Age | 57 | 32 | 40 | 24 |
| Plan | 1 | 2 | 1 | 2 |
| Annual salary | \$84,000 | \$56,000 | \$71,000 | \$26,000 |
| Benefit percent | 50% | 80% | 50% | 80% |
| Maximum benefit | \$3,500 | \$5,000 | \$3,500 | \$5,000 |
| Monthly benefit | $\min(\$3,500, 0.5 * \$84,000) / 12$ = | $\min(\$5,000, 0.8 * \$56,000) / 12$ = | $\min(\$3,500, 0.5 * \$71,000) / 12$ = | $\min(\$5,000, 0.8 * \$26,000) / 12$ = |
| | \$3,500.00 | \$3,733.33 | \$2,958.33 | \$1,733.33 |
| Assume benefit costs are proportional to premium | | | | |
| | Plan 1 Subtotal | Plan 2 Subtotal | Total | |
| Calculate Subtotal by plan | \$6,458.33 | \$5,466.67 | \$11,925.00 | |
| Increase factor | x 1 | | x 1.1 | |
| New overall total using 10% increase | \$6,458.33 | | \$13,117.50 | |
| New plan 2 costs (Total - Plan 1) | | \$6,659.17 | | |
| Necessary Plan 2 increase | $\$6659.17 / \$5,466.67 - 1 =$ | | 21.80% | |

11. Learning Objectives:

3. Evaluate and recommend an employee benefit strategy.

Learning Outcomes:

- (3a) Describe employer's rationale and strategies for offering employee benefit plans.
- (3c) Recommend an employee benefit strategy in light of an employer's objectives

Sources:

HealthWatch – Practical Guide to Private Exchanges

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Identify advantages and disadvantages of implementing a Private Exchange from the point of view of Yates Inc.

Commentary on Question:

The majority of candidates were able to score partial points on this question with many scoring full points.

Advantages

- Increased employee choice
- Cost-savings potential from increased competition across carriers and best-in-class carrier pricing in a multi-carrier model
- Increased consumerism from members buying-down benefits as a result of a transparent defined-contribution approach
- Robust online decision-support tools and customer service
- Benefits administration simplification
- Shift financial and regulatory risks (fully insured model)
- Cost predictability under a fully insured model
- Improved cost transparency

Disadvantages

- Additional expenses for exchange operator financing and risk assumed by carriers in a fully insured model
- Less control/flexibility over plan design, clinical management, member outreach, etc.
- Need to increase defined-contribution amount over time, otherwise plan cost could become overly burdensome to beneficiaries
- Other member concerns such as loss of plan-sponsor support, less generous benefits and general fear of change

11. Continued

- (b) Yates Inc. will move to the Private Exchange model if total expected 2016 costs under the Private Exchange model are no higher than the projected incurred claims under the current plan design.
- (i) Develop plan election and carrier selection assumptions for the members under the Private Exchange model. Justify your response.
- (ii) Assess whether Yates Inc. will move to a Private Exchange model, using your assumptions from part (i). Show your work.

Commentary on Question:

Candidates generally did well on this question. The following shows a detailed approach to the question but was not necessary to achieve full marks.

(i) **Plan selection**

- A reasonable assumption for plan selection could be:

| | CDHP | Traditional |
|--------|------|-------------|
| Silver | 75% | 25% |
| Gold | 25% | 75% |

- With respect to plan selection, those who are currently in the CDHP will be more likely to select the Silver plan in the exchange as the AV's are similar. Likewise, those in the traditional plan are more likely to select the Gold plan in the exchange for the same reasons.

Carrier selection

- A reasonable assumption for plan selection could be:

| | State A | State B |
|---------------------|---------|---------|
| Carrier 1 (Current) | 20% | 95% |
| Carrier 2 | 80% | 5% |

- With respect to carrier selection, those who are currently in State A are more likely to switch carriers due to the lower costs (employees currently contribute approximately 30% of costs). Others, however, may like the service they receive with Carrier 1 and therefore stay with them. For State B, there are no cost incentives to move to Carrier 2, but a small proportion of the population may NOT enjoy the service they are receiving with Carrier 1, and so make the switch to Carrier 2.

11. Continued

(ii) **Determine 2016 costs for current plan design**

| | CDHP | Traditional | Total |
|---|---------------------|----------------------|----------------------|
| 2014 Claims PMPM | \$250.00 | \$375.00 | |
| Annual Trend | 7.0% | 7.0% | |
| # Mos Trend | 24 | 24 | |
| Trend | 1.1449 | 1.1449 | |
| Projected 2016 Claims PMPM | \$286.23 | \$429.34 | |
| Members | 9,000 | 25,000 | 34,000 |
| 2016 Total Projected Annual Cost | \$30,912,300 | \$128,801,250 | \$159,713,550 |

Determine the premium for the private exchange

Using the migration assumptions from part (i), develop average claims costs for Silver and Gold plans:

| | CDHP | Traditional | Average* |
|------------------------------------|----------|-------------|----------|
| 2016 Claims Cost (from prior part) | \$286.23 | \$429.34 | |
| Relative Value – Silver | 0.9589 | 0.8046 | |
| Relative Value – Gold | 1.1644 | 0.9770 | |
| 2016 Claims Cost (Silver) | \$275 | \$345 | \$292.50 |
| 2016 Claims Cost (Gold) | \$333 | \$419 | \$397.50 |

* using the migration assumption of 75% of CDHP enrollees taking Silver (and rest in Gold), and 25% of Traditional members in Silver (and rest in Gold)

Develop expected premiums PMPM

Expected claims PMPM:

| | Carrier 1 | | Carrier 2 | |
|--------|-----------|----------|-----------|----------|
| | State A | State B | State A* | State B |
| Silver | \$311.84 | \$306.82 | \$280.66 | \$306.82 |
| Gold | \$411.18 | \$408.88 | \$370.06 | \$408.88 |

* Carrier 2 has costs that are 10% lower in State A.

Then convert claims into expected premiums PMPM

The question identifies that admin expenses are 0%. The candidate should identify that expected claims = expected premiums as a result.

11. Continued

Calculate expected enrollment by Carrier

Using prior question's assumption for migration:

| | Carrier 1 | | Carrier 2 | |
|--------|-----------|---------|-----------|---------|
| | State A | State B | State A | State B |
| Silver | 950 | 7,838 | 3,800 | 412 |
| Gold | 1,650 | 12,112 | 6,600 | 638 |

Calculate final premium and draw conclusion

| | 2016 Premium |
|-----------------|----------------|
| Silver | \$46,728,000 |
| Gold | \$100,009,440 |
| Total | \$146,737,440 |
| Current | \$159,713,550 |
| Costs/(Savings) | (\$12,976,110) |

So in this case, the company would move to the private exchange. However, this is dependent on the migration assumptions selected by the candidate.

- (c)
- (i) Calculate the minimum monthly employer defined contribution (in dollars) under the Private Exchange model that would result in no increase to the employee's cost-sharing percentage. State any assumptions made and show your work.
 - (ii) Calculate the change in total annual employer and employee costs from 2015 to 2016, reflecting your response in part (i). State any assumptions made and show your work.

Commentary on Question:

Candidates generally did not do well on this question. Most candidates either over complicating part (i) or not providing a response. Marks were still awarded in part (ii) if the candidate applied their calculations from part (i) for the change in ER and EE costs.

- (i) The most expensive plan, according to part b, carries a premium of \$411.18 (Gold level, State A with Carrier 1).

The current employee cost-share, on a percentage basis, is 30%.
(i.e. $\$135 / \450 for the CDHP = 30%, and $\$165 / \$550 = 30\%$ for the Traditional plan)

11. Continued

So the employer cost-share is 70%
 $70\% * \$411.18 = \mathbf{\$287.83}$

So the employer defined contribution would be set at \$287.83, which would result in a 30% employee cost-share for the most expensive plan, and less than 30% for the other plans.

- (ii) The attached table illustrates the split between employee and employer costs:

| | | A | B | C |
|----------------------|-----------------------------|------------------------------|----------------------------|--------------------------------|
| | Premium (from part b) | Recommended DC (from (i)) | EE Payroll Contribution | Enrollment (from part b) |
| State A | | | | |
| - Silver (Carrier 1) | \$311.84 | \$287.83 | \$24.01 | 950 |
| - Silver (Carrier 2) | \$280.66 | \$280.66 | \$0.00 | 3,800 |
| - Gold (Carrier 1) | \$411.18 | \$287.83 | \$123.35 | 1,650 |
| - Gold (Carrier 2) | \$370.06 | \$287.83 | \$82.24 | 6,600 |
| State B | | | | |
| - Silver (Carrier 1) | \$306.82 | \$287.83 | \$18.99 | 7,838 |
| - Silver (Carrier 2) | \$306.82 | \$287.83 | \$18.99 | 413 |
| - Gold (Carrier 1) | \$408.88 | \$287.83 | \$121.06 | 12,113 |
| - Gold (Carrier 2) | \$408.88 | \$287.83 | \$121.06 | 638 |

* The Silver plan with Carrier 2 carries a premium less than the recommended DC, so the DC is adjusted to the premium level, and no employee contributions are required.

The employee costs are simply the sumproduct of columns B and C, multiplied by 12.
= \$29,630,836

The employer costs are simply the sumproduct of columns A and C, multiplied by 12.
= \$117,106,604

Total (as check) = \$146,737,440, which matches to total Silver + Gold costs in part b.

11. Continued

Then change in employee costs:

= \$29,630,836 - \$135 * 9,000 * 12 - \$165 * 25,000 * 12 (the latter two terms are from the information given in the stem)

= \$29,630,836 - \$14,580,000 - \$49,500,000

= (\$34,449,164)

Change in employer costs:

= \$117,106,604 - (\$450 - \$135) * 9,000 * 12 - (\$550 - \$165) * 25,000 * 12 (the latter two terms are from the information given in the stem)

= \$117,106,604 - \$34,020,000 - \$115,500,000

= (\$32,413,396)

12. 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

Learning Outcomes:

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

Sources:

Group Insurance Chapter 8

Commentary on Question:

Question attempts to test candidate's knowledge of the different plan provisions under dental insurance plans, and how different plan provisions affect costs. It also explores the reasons for electing certain plan provisions related to dental insurance and tests whether candidates can determine the cost to the plan based on the specified plan provisions.

Solution:

- (a) Draft an email to your actuarial analyst critiquing her suggestions.

Commentary on Question: *"Critique" means the candidate was expected to explicitly indicate if suggestion is good or bad (can't be both) and give a valid explanation as to why.*

Dear actuarial analyst,

I've reviewed your suggestions for reducing dental claim costs and have the following comments:

- Individual stop-loss is not a good idea- Dental claims typically aren't catastrophic and the product wouldn't need protection from high severity claimants
- Lowering type 1 coinsurance to 75% is not a good idea. Type 1 services are preventive services. Higher cost sharing on Type 1 services may lead to deferral of those services, which isn't good, as it may lead to more Type 2 and Type 3 services being needed. Type 2 and Type 3 services are more expensive so this could likely result in higher overall costs to the plan.

Thanks,
Actuarial Manager

12. Continued

- (b) Recommend alternative strategies to reduce dental claim costs. Justify your response.

Commentary on Question: *The alternative strategies should relate to suggestions for plan provision changes specific to the plan provisions already identified. Not sufficient to just list the strategy – give an explanation on how it would reduce costs.*

- Increase type 1 cost share to 100% to incent members to get preventative screenings completed. Could decrease type 2 and 3 claims.
- Lower coinsurance out of network for type 2 insurance. This would steer members to in network providers and lower claim levels.
- Create a bigger spread between in and out of network coinsurance for type 3 and 4 insurance. This would steer more members to in network providers and lower claim levels.
- Increase spreads between coinsurance across the types of coverage. Claims get significantly more expensive as you increase in type, this would give the member a greater share of the cost of coverage, and is more prevalent in the market.
- Add annual or lifetime maximum for Type 4. This is very common in the market.
- Add plan maximums. These are allowed in dental plans, whereas medical plans must be unlimited.

- (c) Calculate the amount reimbursed by the plan, assuming:

- (i) All claims are in-network
- (ii) All claims are out-of-network

Show your work.

Commentary on Question: *Should explicitly state what type the particular service falls under.*

12. Continued

| Service | Claim amount | In Network | Out of Network |
|------------------------------------|--------------|---------------------------------------|--|
| Emergency treatment for molar pain | \$1,500 | Type 1: $0.95 * \$1,500 = \$1,425$ | Type 1: $0.95 * (\$1,500 - \$50)$ deductible = \$1,377.50 |
| Molar extraction | \$2,300 | Type 2: $0.95 * \$2,300 = \$2,185$ | Type 2: $0.95 * \$2,300 = \$2,185$ |
| Braces | \$3,000 | Type 4: $0.80 * \$3,000 = \$2,400$ | Type 4: $\min(0.70 * \$3,000, \$1,000) = \$1,000$ |
| Routine cleaning and x-rays | \$400 | Type 1: $0.95 * \$400 = \380 | Type 1: $0.95 * \$400 = \380 |
| Root canal | \$1,000 | Type 3: $0.90 * \$1,000 = \900 | Type 3: $0.80 * \$1,000 = \800 |
| TOTAL | \$8,200 | \$7,290 | \$5,742.50 |

13. Learning Objectives:

3. Evaluate and recommend an employee benefit strategy.

Learning Outcomes:

- (3b) Evaluate the elements of cafeteria plan design, pricing and management.
- (3c) Recommend an employee benefit strategy in light of an employer's objectives.

Sources:

The Handbook of Employee Benefits, Rosenbloom, 7th Edition, Chapter 25

Commentary on Question:

Question attempts to test candidate's knowledge of the different plan provisions under dental insurance plans, and how different plan provisions affect costs. It also explores the reasons for electing certain plan provisions related to dental insurance and tests whether candidates can determine the cost to the plan based on the specified plan provisions.

Solution:

- (a) Describe the different types of cafeteria plans available.

Commentary on Question:

Candidates got credit for listing the names of the plan types and then providing a satisfactory explanation. Some candidates mentioned Section 125 Plans, but never touched on FSA plans or Premium Conversion. Candidates who scored well often mentioned who could contribute to the plan in each case.

- FSA – Flexible spending Account
 - Employer contributes a set amount into a flexible spending account
 - Employees can also contribute
 - Employees can use funds for medical costs, adoption assistance, and dependent care
 - Funds cannot be rolled over and are not portable
- Full Flex Plan
 - Employer gives employees credits which can be used to purchase employee benefits
 - Employees can sometimes purchase additional credits
 - Benefits such as health, term life, AD&D, and LTC can be purchased
- Premium Conversion Plan
 - Employer does not contribute but employees are able to purchase benefits through the employer with pre-tax dollars
 - Employees can receive the employer's group discount

13. Continued

- (b) Recommend a cafeteria plan to Management. Justify your response.

Commentary on Question:

Most candidates did not provide answer in memo format. Additionally, most candidates did not focus on employer perspective. Mentioning the benefits to the employees is important, but to obtain full credit, candidates must focus on both employer and employee benefits. Candidate must select a specific type of cafeteria plan and provide sufficient support. There are alternative solutions to this particular question and the following is a sample solution that warrants full credit.

To: Broughton Management

RE: Employee Benefit Plan

In Lieu of the recent employee survey, I recommend Broughton should offer a full flex plan.

Employees want benefits, like life insurance, which cannot be purchased through an FSA. So while an FSA would keep the costs stable for Broughton, it is not the best option. Such benefits, however, can be purchased with a full flex plan. Vision and STD plans can also be offered through a full flex plan.

Note that Parking, transit, gym membership reimbursement, and dependent life insurance cannot be offered through any type of cafeteria plan, and therefore should not be part of the pre-tax offerings.

A full flex plan will allow Broughton to allocate credits as they wish, which helps control employer costs. Credits can also be given for service recognition or performance recognition, which will help to motivate employees. Credits can also be used to purchase coverage for dependents.

There will be some costs to setting up and administering the plan, but Broughton is a larger company with 500 employees, so costs should be manageable.

Employees will enjoy the flexibility and will have allowed benefits they desire at minimal extra cost to the company.

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:

- (2b) Develop an experience analysis.
- (2c) Calculate and recommend assumptions.
- (2d) Calculate and recommend a manual rate.
- (2g) Apply actuarial standard of practice in evaluating and projecting claim data.

Sources:

Group Insurance textbook chapters 33 & 37

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Describe the rating variables you should consider when normalizing claim cost data for manual rate development.

Commentary on Question: *To receive full credit, candidates must have listed at least four of the rating variables below in addition to providing an appropriate description. Only half of the maximum points were received for listing the variables.*

- age and gender - use separate age/gender factors for different major service or plan types
- geographic area - state, region, or metropolitan statistical area (MSA)
- benefit plan - adjust to reflect a common benefit plan, usually richest plan
- group characteristics (e.g. industry type, group size) - manual rate represents average group with regard to group characteristics
- utilization management - adjust for any significant differences in these types of programs
- provider reimbursement arrangements - adjust for any significant difference in these arrangements
- other risk adjusters - the more refined risk adjusters, based primarily on claim, diagnosis, and encounter data, as well as Rx claim info, may eventually replace age and gender adjustments, as well as potentially geographic and industry adjustments, as the primary method of risk adjustment in the future

14. Continued

- (b) Calculate the renewal rate per employee per month for calendar year 2016. Show your work.

Commentary on Question:

The most successful candidates were those who applied the correct months of trend, applied the SIC factor appropriately, and calculated a renewal rate PEPM instead of PMPM. Most candidates struggled to correctly calculate and incorporate the pooling charge. In calculating the pooling charge, some candidates interpreted “non-pooled” as before pooling instead of net of pooling, which led to overstating claims by \$85k, the pooled amount. Most candidates also incorporated the pooling charge prior to blending the experience and manual rates, understating its impact once credibility was applied.

Note: Candidates received credit whether they converted from a PMPM to a PEPM up-front in the experience and manual rate development, or at the end in the gross premium calculation, as shown below.

Experience Rate Development

$$\begin{aligned} \text{Incurred Non-Pooled Claims PMPM} &= \\ & \quad \text{Paid Claims } (\$1,200,000) \\ + & \quad \Delta \text{ in Reserves } (\$350k - \$300k = \$50,000) \\ - & \quad \text{Large claims above pooling threshold } (\$125k - \$100k) + (\$110k - \$100k) + (\$150k - \$100k) = \$85,000 \\ / & \quad \text{Member Months } (300 * 12 = 3,600) \\ = & \quad \$323.61 \text{ } ([\$1,200,000 + \$50,000 - \$85,000] / [3,600]) \\ \text{Projected Incurred Claims PMPM} &= \\ & \quad \text{Incurred Non-Pooled Claims PMPM } (\$323.61) \\ * & \quad \text{Trend (Experience Period Midpoint } \rightarrow \text{ Effective Period Midpoint} = 1/1/14 \rightarrow 7/1/16 = 30 \text{ months)} \\ = & \quad \$410.68 \text{ } ([\$323.61] * [1+10\%]^{\wedge}[30/12]) \end{aligned}$$

Manual Rate Development

$$\begin{aligned} \text{Base Manual Rate PMPM, Effective 1/2015} &= \$260 \\ \text{Projected Manual Rate PMPM} &= \\ & \quad \text{Base manual rate } (\$260) \\ * & \quad \text{SIC Factor } (1.1) \\ * & \quad \text{Trend (Manual Rate Effective Date } \rightarrow \text{ Effective Period Midpoint} = 1/1/15 \rightarrow 7/1/16 = 18 \text{ months)} \\ = & \quad \$329.96 \text{ } ([\$260 * 1.1] * [1+10\%]^{\wedge}[18/12]) \end{aligned}$$

Blended Rate Development

Credibility Factor = 40% (3,600 member months between 3,500 and 4,999)

$$\begin{aligned} \text{Projected Claims PMPM} &= \\ & \quad (\text{Projected Experience PMPM} * \text{Credibility Factor}) + (\text{Projected Manual PMPM} * (1 - \text{Credibility Factor})) = \\ & \quad (\$410.68 * 0.4) + (\$329.96 * (1 - 0.4)) = \$362.25 \end{aligned}$$

14. Continued

Pooling Charge

$$\begin{aligned} \text{Pooling Charge PMPM} &= \\ &\quad \text{Pooling Charge (8.5\%)} \\ * &\quad \text{Projected Incurred Claims PMPM (\$410.68)} \\ = &\quad \$34.91 (\$410.68 * 0.085) \end{aligned}$$

Gross Premium

$$\begin{aligned} \text{Gross Premium PMPM} &= \\ &\quad \text{Projected Claims PMPM (\$362.25)} \\ + &\quad \text{Pooling Charge PMPM (\$34.91)} \\ / &\quad \text{Non-Claim Expense Adjustment (1 - SG\&A - Profit Margin - Premium Tax)} \\ = &\quad \$470.00 ([\$362.25 + \$34.91] / [1 - 0.072 - 0.015 - 0.03 - 0.018 - 0.02]) \end{aligned}$$

$$\begin{aligned} \text{Gross Premium PEPM} &= \\ &\quad \text{Gross Premium PMPM} \\ * &\quad \text{Member Months (300 * 12 = 3,600)} \\ / &\quad \text{Employee Months (120 * 12 = 1,440)} \\ = &\quad \$1,175.01 ([\$470 * 3,600] / [1,440]) \end{aligned}$$