1. **Learning Objectives:**

3. The candidate will understand how to 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.

(3c) Recommend an employee benefit strategy in light of an employer’s objectives.

**Sources:**

Consumers to the Rescue? A Primer on HDHPs and HSAs

**Commentary on Question:**

Candidates generally did well on this question as a whole. Most candidates understood most or all of the differences between the three kinds of savings accounts. Candidates struggled most with the technical nature of an HDHP, which represents a specific legal definition, and many candidates conflated HDHPs and the HSAs that frequently accompany them.

**Solution:**

(a) 

(i) Describe key characteristics of an HDHP.

(ii) Explain each characteristic’s applicability to HECC’s mission.

**Commentary on Question:**

Candidates were typically able to recognize the “high deductible” part of high deductible health plan, and most identified the existence of a maximum out of pocket limitation. However, candidates typically did not describe the services to which each of these applied. Candidates often were able to identify the consumerism invoked by a high deductible.

High Deductible Health Plan is a legal term characterized by two primary features

1. A minimum deductible which must apply to all non-preventive services, set at $1,350 for self-only coverage in 2019

2. A maximum out-of-pocket limitation which must apply to all in-network services, set at $6,750 for self-only coverage in 2019.
1. Continued

A minimum deductible ensures that members are exposed directly to the costs associated with services, which helps them become more educated consumers. The presence of an out-of-pocket limitation has less direct impact, as it primarily serves as a consumer protection so that consumer education is also paired with full protection from catastrophic claims, although the requirement that this apply to in-network services only forces consumers to evaluate the site of care and ensure that care is received from appropriate providers.

(b) Describe ways the HDHP could be structured to best achieve HECC’s mission.

Commentary on Question:
Candidates typically did well on this question, and were generally able to describe how consumer education could be enhanced through various features available to an HDHP.

HECC could structure their HDHP as follows
- Utilize a low deductible, coinsurance, and a high MOOP in order to increase consumer exposure to cost variability.
- Include preventive services at no cost to give members incentive to take advantage of services that can avoid higher-cost procedures later
- Pre-funded HSAs can give consumers a financial cushion to help absorb the direct impact of first dollar costs, and employee ownership of the funds in this account will serve to decrease incentives to simply spend the money.

(c) Compare and contrast:

(i) Health Reimbursement Accounts

(ii) Health Savings Accounts

(iii) Flexible Savings Accounts

Commentary on Question:
Candidate performance on part (c) typically demonstrated a good understanding of the differences between the three types of accounts, though many candidates made errors in some characteristics for one or another of the account types.
1. Continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HRA</th>
<th>HSA</th>
<th>FSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Ownership</td>
<td>Employer</td>
<td>Employee</td>
<td>Employer</td>
</tr>
<tr>
<td>Account Funding</td>
<td>Employer only</td>
<td>Employer and employee (or individual for a non-group plan)</td>
<td>Employer and employee</td>
</tr>
<tr>
<td>Maximum Contribution</td>
<td>None (except a QSEHRA)</td>
<td>$3,500 in 2019 for a self-only plan</td>
<td>$2,700 in 2019</td>
</tr>
<tr>
<td>Fund rollover</td>
<td>Permissible, but not required</td>
<td>Required</td>
<td>Limited, typically “use it or lose it”</td>
</tr>
<tr>
<td>Tax treatment</td>
<td>Tax-deductible</td>
<td>Tax Deductible</td>
<td>Tax Deductible</td>
</tr>
<tr>
<td>Requires an HDHP</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

(d) Recommend which account HECC should provide with its HDHP. Justify your answer.

Commentary on Question:
In order to receive full credit, justifications had to support one account type uniquely (e.g. HECC should pick an HSA because employee ownership of the account will increase the consumer incentives relative to the other account types). Partial credit was awarded for answers that were appropriate for the recommended account type but did not distinguish between the three account types (e.g. HECC should offer an HRA to offset employee exposure to pre-deductible costs).

HECC should pair an HSA with its HDHP. HSAs offer higher contribution limits and give employees the ability to roll over funds to future years if amounts are unused. Additionally, employee ownership of the account will encourage employees to view the funds as their own, which will help minimize incentives for employees to receive unnecessary or unnecessarily expensive medical care.
2. **Learning Objectives:**

1. The candidate will understand how to describe plan provisions typically offered under:
   - Group and Individual medical, dental and pharmacy plans.
   - Group and Individual long-term disability plans.
   - Group and Individual short-term disability plans.
   - Supplementary plans, like Medicare Supplement.
   - Group and Individual long-term care insurance.

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

3. The candidate will understand how to evaluate and recommend an employee benefit strategy.

**Learning Outcomes:**

(1b) Describe each of the coverages listed above.

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

(2c) Calculate and recommend assumptions.

(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.

(3c) Recommend an employee benefit strategy in light of an employer’s objectives.

**Sources:**

- Group Insurance, Ch. 12 Group Disability Income Benefits
- Group Insurance, Ch. 25 Estimating Disability Claim Costs
- GHDP-101-13 Group Disability Insurance (Sections 4 & 7)
- The Handbook of Employee Benefits, Ch. 2 Functional Approach to Designing and Evaluating Employee Benefits
- The Handbook of Employee Benefits, Ch. 32 Employee Benefit Plans for Small Companies (pp. 869-874)
Commentary on Question:
Part (a) asked candidates to describe differences between GLTD and GSTD.

Part (b) asked candidates to describe considerations under GSTD and GLTD elimination period and benefit period to optimize the integration of two products for the insurance company and the policyholder. To get full credit candidates needed to describe 1. GLTD elimination period = GSTD elimination period + GSTD benefit period and 2. Explain the setup will allow policyholders to be covered continuously and avoid overlap of benefits paid

Part (c) asked candidates to demonstrate the difference between Social Security disability benefits vs GSTD.

Part (d) asked candidates to rank the absolute level of adjustment factors (algebraically) based on the given characteristics of the group. To get full credit candidates needed to rank the adjustments correctly and explain their reasoning.

Part (e) asked candidates to calculate the expected monthly claim cost using the given manual rate and experience rate.

Part (f) asked candidates to describe reasonable recommendations to lower the cost of insurance for the employer while continuing to provide value to employees. To get full credit, candidate needed to list at least 2 viable recommendation and explain 1. Why the recommendation will lower cost of insurance for the employer and 2. Why the recommendation will continue to provide value to employees

Solution:
(a) Contrast GLTD and GSTD coverages.

Commentary on Question:
Partial credit was given if a candidate mentioned the benefit/elimination period lengths but did not give examples of the difference in lengths

- The benefit period for GSTD is considerably shorter than under GLTD, typically 13 or 26 weeks compared to 2-5 years or until 65
- Elimination periods are much shorter for GSTD (0-1 week) vs GLTD (3-12 months)
- Much of the claim cost for GSTD plans comes from normal maternity claims and accident claims, while much of the claim cost for GLTD plans comes from disabling illnesses
2. Continued

(b) Describe considerations for aligning the elimination period in the GSTD and GLTD programs.

**Commentary on Question:**
*Candidates were expected to mention both eliminating the overlap in coverage and creating a no-gap coverage*

The elimination period of GLTD should equal to the sum of elimination period of GSTD and the benefit period of GSTD to ensure continuous benefits for a disabled policyholder while preventing overlap/duplication of GLTD and GSTD benefits.

(c) Recommend whether or not Xrom should integrate the proposed GSTD program with Social Security disability benefits. Justify your recommendation.

Xrom should not integrate GSTD benefit payments with Social Security disability benefit because the SSDI program has a long elimination and approval period which usually is longer than the benefit of GSTD. Consequently, any potential savings of an offset will not cover the administrative cost of the integration on GSTD.

(d) Rank the impact on the manual rate for a group with the following characteristics from lowest (1) to highest (3). Justify your response.

<table>
<thead>
<tr>
<th>Employee Participation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>1</td>
</tr>
<tr>
<td>50-89%</td>
<td>2</td>
</tr>
<tr>
<td>Less than 50%</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monthly Earnings per Employee</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $1,500</td>
<td>3</td>
</tr>
<tr>
<td>$1,500-2,000</td>
<td>2</td>
</tr>
<tr>
<td>$2,000 or more</td>
<td>1</td>
</tr>
</tbody>
</table>

**For employee participation:**
The least healthy employees are the most likely to enroll, resulting in anti-selection and requiring a rate load when employee participation levels are low. The required adjustment to manual rates increases as participation decreases.

**For monthly earnings per employee:**
Incidence rates are lower for higher paid workers for most industries due to better access to medical services and higher incentive to go back to work. However, for some industries such as surgeons, higher income may increase incidence rates due to physical requirements, economic uncertainty, or stress.
2. Continued

(e) Calculate the expected monthly claim cost. Show your work.

Base manual rate = monthly incidence rate x reserve at time 0 = 0.0005 x 45 = 0.0225
Adjusted manual rate = adjustment factor x base manual rate = 0.95 x 0.0225 = 0.0214 (based on Xrom having 500 employees)
Expected monthly claim cost = adjusted manual rate x (1-credibility) + expected claim rate x (credibility) = 0.0214 x (1-0.8) + 0.04 x (0.8) = 0.0363

(f) Recommend modifications to the plan design to reduce the GLTD plan’s cost while providing value to employees. Justify your recommendation.

Commentary on Question:
Candidates needed to recommend at least two modifications to receive full credit. Credit was provided for recommendations other than the below, provided they were reasonable and appropriately justified.

- Reduce the monthly maximum benefit to an amount that better represents the majority of employees in the group. Most employees at a supermarket chain will have monthly income much lower than $10,000. Lowering the maximum will lower the insurance cost and will only impact the potential benefit for the highest paid employees.
- Extend the elimination period. This will exclude coverage for shorter term conditions, lowering the overall incidence rate and insurance cost. A GSTD benefit can be extended to match the elimination period since GSTD tends to be lower cost than GLTD. Employees will remain covered for the period that they are disabled.
- Have employees share in the cost for larger benefit amounts. For example, Xrom could provide a 50% benefit level and let employees purchase supplemental GLTD, increasing their benefit at a modest cost to 60% or 70% of pay.
3. **Learning Objectives:**

1. The candidate will understand how to describe plan provisions typically offered under:
   - Group and Individual medical, dental and pharmacy plans.
   - Group and Individual long-term disability plans.
   - Group and Individual short-term disability plans.
   - Supplementary plans, like Medicare Supplement.
   - Group and Individual long-term care insurance.

2. The candidate will understand how to calculate 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.

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

(2c) Calculate and recommend assumptions.

(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:**

Individual Health Insurance, 2nd Edition, Ch. 2

Group Insurance, 7th Edition, Ch 26

Mechanics and Basics of Long-Term Care Rate Increases, Long-Term Care News, August 2014

**Commentary on Question:**

Commentary listed underneath question component.

**Solution:**

(a)  

(i) List the activities of daily living allowed under HIPAA.

(ii) Describe the benefit trigger requirements for a tax-qualified LTC policy.
3. Continued

Commentary on Question:
Most candidates successfully listed all activities of daily living and were able to describe the benefit trigger requirements.

(i)
- Bathing
- Continence
- Dressing
- Eating
- Toileting
- Transferring

(ii) The inability to perform (without substantial assistance from another individual) at least two activities of daily living, or a cognitive impairment that requires substantial supervision to protect the health and safety of the insured.

(b) Calculate the discounted lifetime loss ratio as of 12/31/2013. Show your work.

Commentary on Question:
Most candidates successfully calculated the lifetime loss ratio. Some common errors included using only past years or only using future years.

Discount Factors:

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Discount Factor Formula</th>
<th>Discount Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>(1 +3.0%) ^ (1.5)</td>
<td>1.0453</td>
</tr>
<tr>
<td>2013</td>
<td>(1 +3.0%) ^ (0.5)</td>
<td>1.0149</td>
</tr>
<tr>
<td>2014</td>
<td>(1 +3.0%) ^ (-0.5)</td>
<td>0.9853</td>
</tr>
<tr>
<td>2015</td>
<td>(1 +3.0%) ^ (-1.5)</td>
<td>0.9566</td>
</tr>
</tbody>
</table>

Discounted Premiums:

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Discounted Premium Formula</th>
<th>Discounted Premiums</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1.0453 x 180,000</td>
<td>188,160</td>
</tr>
<tr>
<td>2013</td>
<td>1.0149 x 210,000</td>
<td>213,127</td>
</tr>
<tr>
<td>2014</td>
<td>0.9853 x 195,000</td>
<td>192,139</td>
</tr>
<tr>
<td>2015</td>
<td>0.9566 x 180,000</td>
<td>172,193</td>
</tr>
</tbody>
</table>

Total Discounted Premiums
188,160 + 213,127 + 192,139 + 172,193 = 765,620
3. Continued

Discounted Claims:

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Discounted Claims Formula</th>
<th>Discounted Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1.0453 x 80,000</td>
<td>83,627</td>
</tr>
<tr>
<td>2013</td>
<td>1.0149 x 125,000</td>
<td>126,861</td>
</tr>
<tr>
<td>2014</td>
<td>0.9853 x 180,000</td>
<td>177,359</td>
</tr>
<tr>
<td>2015</td>
<td>0.9566 x 300,000</td>
<td>286,989</td>
</tr>
</tbody>
</table>

Total Discounted Claims
83,627 + 126,861 + 177,359 + 286,989 = 674,836

Lifetime Loss Ratio = Total Discounted Claims / Total Discounted Premiums
674,836 / 765,620 = 88.1%

(c) Recommend a rate increase effective on January 1, 2014 that meets these goals. Justify your answer. Show your work.

Commentary on Question:
Candidates were required to use the 2000 NAIC Model Regulation. Candidates who knew to use this regulation did well on this part. Most candidates used the 2014 regulation, which was not appropriate since the block was closed as of 12/31/2013.

The NAIC Model Regulation requires that the sum of accumulated value of incurred claims and the present value of future incurred claims will not be less than the sum of:
(i) the accumulated value of initial earned premium times 58%;
(ii) 85% of the accumulated value for prior premium rate schedule increases on an earned basis;
(iii) the present value of future projected initial earned premiums times 58%; and
(iv) 85% of the present value of future projected premiums not included in (iii), on an earned basis.
(i) + (iii) + (ii) + (iv) ≤ Discounted Claims

Sub Formulas:
Discounted claims = 83,627 + 126,861 + 177,359 + 286,989 = 674,836
(all years accumulated and present value of claims from part b)

(i) = 58% x (188,160 + 213,127) = 232,747
(2012 + 2013 accumulated premiums from part b)

(iii) = 58% x (192,139 + 172,193) = 211,313
(2014 + 2015 present value of premiums from part b)
3. Continued

(ii) = 85% x 0 = 0
(no prior rate increases)

(iv) = 85% x Proposed Rate Increase x (192,139 + 172,193) = Proposed Rate Increase x 309,683
(2014 + 2015 present value of premiums from part b, Solving for Proposed Rate Increase)

To find the maximum rate increase allowed as management requests we can use the following formula:

(i) + (iii) + (ii) + (iv) = Discounted Claims

232,747 + 0 + 211,313 + (Proposed Rate Increase) x 309,683 = 674,836

Answer: Recommended Rate Increase = (674,836 – (232,747 + 0 + 211,313)) / 309,683 = 74.5%

(d) Explain why this occurs for an LTC block under:

(i) normal conditions

(ii) adverse conditions

Commentary on Question:
Most candidates were able to list most drivers of premiums not keeping pace with claims. However, most did not differentiate between normal and adverse conditions. Candidates did not receive full credit when simply listing drivers with no explanation.

(i) Normal conditions could result in higher claim growth than premiums due to:
   • Premiums priced on an issue age basis
     o Premiums don’t change over time unless a rate increase is pursued, but claims do grow as policies age. This results in growing claims as premiums stay flat
     o Premiums in early durations are higher than claims and lower than claims in later durations
       ▪ On a lifetime basis premiums cover the expected claims
3. Continued

(ii) Adverse conditions could result in higher claim growth than expected due to:

- Higher morbidity than expected.
  - Higher morbidity may not be readily apparent in early periods.
  - Higher morbidity = higher claim costs per policy, so this raises overall claims
- Lower lapses & mortality (higher persistency) than expected in later durations.
  - Higher persistency in later durations leads to paying out claims on more policies than originally priced for, this causes a greater mismatch between premiums/claims.
4. **Learning Objectives:**

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

3. The candidate will understand how to evaluate and recommend an employee benefit strategy.

**Learning Outcomes:**

(2d) Calculate and recommend a manual rate.

(3c) Recommend an employee benefit strategy in light of employer’s objectives.

**Sources:**

*Group Insurance, 7th Edition, Ch. 34*

*GHDP-106-16: Health Plan Payroll Contribution Strategies and Development for Employers*

*The Handbook of Employee Benefits, 7th Edition Ch. 2*

**Commentary on Question:**

*Commentary listed underneath question component.*

**Solution:**

(a) Describe drivers of changes in unit cost trend.

**Commentary on Question:**

*Many candidates listed general drivers of medical trend rather than drivers specific to unit cost. To receive full credit, candidates needed to describe drivers and not just list drivers.*

Drivers of changes in unit cost trend include:

- Medical service price changes such as changes in provider contracts
- Severity – increase in intensity of treatment
- Mix – Change in mix of services (inpatient, outpatient, professional, etc.) or mix of providers.

(b) Calculate the actual:

(i) unit cost trend X

(ii) total trend Y

Show your work.
4. Continued

**Commentary on Question:**
*Many candidates selected the incorrect weights to apply for the actual cost trends.*

2018 Unit Cost with Projected Weight = (50% x $50)+(20% x $75)+(10% x $1500)+(5% x $1000)+(10% x $5000)+(5% x $10000) = $1240.00

2019 Actual Unit Cost with Actual Weight = (46% x $48)+(24% x $80)+(10% x $1700)+(5% x $1250)+(10% x $5450)+(5% x $10200) = $1328.78

Unit cost trend X = $1327.78/$1240.00 – 1 = 7.16%

Total Trend Y = (1+7.16%)(1+1.4%)(1+1.0%)(1-2.0%)(1+0.5%)(1+0.1%) – 1 = 8.20%

(c) Calculate the projected net aggregate annual medical budget surplus or deficit for JKL as of March 31, 2019. Show your work.

**Commentary on Question:**
*To receive full credit, candidates needed to understand that because the group is self-funded, a budget deficit/surplus will exist when actual claims differ from expected claims. Candidates did not need to take into account the employer subsidy to calculate the correct budget surplus/deficit.*

Projected Total Cost = $350 x 5,000 x 12 = $21,000,000

Actual Total PMPM Cost = $350/1.042 x 1.082 = $363.44
Actual Total Cost = $363.44 x 5,000 x 12 = $21,806,400

Budget Deficit = $21,806,400 - $21,000,000 = $806,400

(d) Recommend cost-saving strategies JKL could implement to mitigate any potential budget deficit. Justify your response.

I recommend that JKL implement the following strategies to mitigate the budget deficit:
- Use managed care approaches for medical benefits, which will result in lower costs in current year and mitigate against potential benefit budget.
- Use utilization review for medical expense benefits which will help to reduce unnecessary utilization and consequently costs in the current year to improve budget deficit.
- Renegotiate fee schedules to reduce current year’s expense levels, which will reduce expense to mitigate the budget deficit.
5. **Learning Objectives:**

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

**Learning Outcomes:**

(2a) Identify and evaluate sources of data needed for pricing, including the quality, appropriateness and limitations of each data source.

(2b) Develop a medical cost trend experience analysis.

**Sources:**
Group Insurance, Ch. 23

**Commentary on Question:**
*Commentary listed underneath question component.*

**Solution:**

(a) Describe fixed cost leveraging.

**Commentary on Question:**
*Most candidates showed an understanding of this concept.*

Fixed cost leveraging occurs when the cost of services increases but the members’ cost sharing (i.e. copays and deductibles) remains at a fixed amount. Since the member pays a fixed amount any cost increases are absorbed by the insurer. Therefore, the insurer’s costs increase at a higher rate than the overall trend. Coinsurance does not experience FCL because increases in cost affect both the member and the insurer proportionally.

(b) Calculate the fixed cost leveraging from 2019 to 2020. Show your work.

**Commentary on Question:**
*This was a multi-part calculation. Partial credit was given for correct formulas and carrying forward incorrect values and using them within correct formulas.*

<table>
<thead>
<tr>
<th>2019 PL and TL</th>
<th>Utilization/1000</th>
<th>AWP (1)</th>
<th>Discount (2)</th>
<th>Inq Cost (3)=(1) x (1 - (2))</th>
<th>Disp Fee (4)</th>
<th>Allowed '19 (5) = (3) + (4)</th>
<th>Member Cost Sharing (6)</th>
<th>Rebates (7)</th>
<th>Net PL (8) = (5) - (6) - (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic</td>
<td>800</td>
<td>55</td>
<td>75%</td>
<td>13.75</td>
<td>2</td>
<td>15.75</td>
<td>10</td>
<td>0%</td>
<td>5.75</td>
</tr>
<tr>
<td>Preferred Brand</td>
<td>100</td>
<td>205</td>
<td>25%</td>
<td>153.75</td>
<td>2</td>
<td>155.75</td>
<td>50</td>
<td>10%</td>
<td>90.175</td>
</tr>
<tr>
<td>Nonpreferred Brand</td>
<td>80</td>
<td>250</td>
<td>15%</td>
<td>212.5</td>
<td>2</td>
<td>214.5</td>
<td>75</td>
<td>0%</td>
<td>139.5</td>
</tr>
<tr>
<td>Specialty</td>
<td>20</td>
<td>2700</td>
<td>10%</td>
<td>2430</td>
<td>2</td>
<td>2432</td>
<td>20%</td>
<td>0%</td>
<td>1945.6</td>
</tr>
<tr>
<td>Total</td>
<td>1,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>63.69</td>
</tr>
</tbody>
</table>

\[ Net PL = (\text{Allowed '19}) - (\text{Member Cost Sharing}) - (\text{Rebates}) \]
5. Continued

The Totals are the result of weighting each drug category by the respective utilization rates. For example:

\[ 93.98 = 15.75 \times (0.8) + 155.75 \times (0.1) + 214.5 \times (0.08) + 2432 \times (0.02) \]

Total Allowed Trend = \( \frac{104.54}{93.98} \times 100 \% = 11.25\% \)
Plan Liability Trend = \( \frac{72.64}{63.69} \times 100 \% = 11.40\% \)

Fixed Cost Leverage effect = 14.06\% - 11.25\% = 2.81\%

(c) Describe approaches Quantum can take to reduce the fixed cost leveraging impact on its plan liability.

Commentary on Question:
Candidates received credit for reasonable responses.

Quantum can reduce the fixed cost leveraging impact on its plan liability by doing any of the following:

1. Introduce a member deductible that is indexed or increased each year to keep up with the cost trend.
2. Index or increase the T1, T2, and T3 copays to keep up with the cost trend. T4 has a coinsurance plan design which does not impact leveraging.
3. Change the T1-T3 copay plan designs to coinsurance since coinsurance is not affected by fixed cost leveraging.

(d) Calculate the 2020 rebate as a percentage of allowed costs that is necessary for Quantum’s plan liability to remain cost neutral. Show your work.

Commentary on Question:
Candidate performance was mixed on this part. Candidates were generally able to calculate ingredient cost but unable to come up with the rebate percentage. Credit was given when miscalculations were carried through but the formulas/reasoning were correct.
5. Continued

Ingredient Cost = AWP x (1-Discount)
Allowed Cost = Ingredient Cost + Dispensing Fee
Plan Liab = Allowed – Cost Sharing – Rebates

Plan Liab for T3 = \[265 \times (1-.14) + 2.50\] x (1-.10) – 75 = 132.36
Plan Liab for T2 = \[265 \times (1-.20) + 2.50\] x (1-x%) – 50

Set the two plan liability formulas equal to each other and solve for x%:

132.36 = 214.5 x (1-x%) – 50
182.36 = 214.5 x (1-x%)
0.85 = 1 – x%
X% = 15% = Rebate
6. Learning Objectives:
1. The candidate will understand how to describe plan provisions typically offered under:
   - Group and Individual medical, dental and pharmacy plans.
   - Group and Individual long-term disability plans.
   - Group and Individual short-term disability plans.
   - Supplementary plans, like Medicare Supplement.
   - Group and Individual long-term care insurance.

2. The candidate will understand how to calculate 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.

(2f) Describe the product development process including risks and opportunities to be considered during the process.

Sources:
Group Insurance, Chapter 22

Commentary on Question:
Candidates generally performed well on parts (a) and (b), while parts (c) and (d) differentiated candidates.

Solution:
(a) List and describe the classes of dental services.

Commentary on Question:
Candidates performed well on this part. The most common way that candidates lost credit was simply listing without describing the classes.

(i) Preventive/Diagnostic (Type I): low-cost, routine services intended to maintain oral health; typically include Oral evaluations, Prophylaxis, Fluoride Treatments, X-rays, Lab/diagnostic tests

(ii) Basic (Type II): intermediate cost services; typically include: Emergency treatment, Space maintainers, Simple Extractions, Surgical Extractions, Oral Surgery, Anesthesia Services, Restorations, Periodontics, Endodontics

(iii) Major (Type III): intensive, high-cost services; typically include: Inlays/Onlays/Crowns, Dentures, Bridges, Other prosthetics, Implants
6. Continued

(b) Calculate the average annual claims cost per member that XYZ should use in pricing the new product. Show your work.

**Commentary on Question:**
Candidates performed well on this part, and most candidates received full credit.

<table>
<thead>
<tr>
<th>Percent of Members</th>
<th>2018 Cost ($)</th>
<th>2020 Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.00%</td>
<td>0.00</td>
<td>0* (1+2%)^2 = 0.00</td>
</tr>
<tr>
<td>40.00%</td>
<td>200.00</td>
<td>208.08</td>
</tr>
<tr>
<td>21.00%</td>
<td>650.00</td>
<td>676.26</td>
</tr>
<tr>
<td>3.00%</td>
<td>1,200.00</td>
<td>1,248.48</td>
</tr>
<tr>
<td>0.70%</td>
<td>1,800.00</td>
<td>1,872.72</td>
</tr>
<tr>
<td>0.30%</td>
<td>4,000.00</td>
<td>4,161.60</td>
</tr>
</tbody>
</table>

Average: \( \text{SumProd}(A, C) = 288.29 \)

(c) Calculate the revised average annual claims cost per member and the effective annual trend from 2018 to 2020 for annual maximum values of:

(i) $1,000

(ii) $2,000

Show your work.

**Commentary on Question:**
Candidate performance was mixed on this question. The most common mistake was to calculate trend compared to a 2018 average without an annual maximum, instead of comparing to a re-calculated 2018 value that incorporated the annual maximum. Partial credit was given to candidates who calculated the 2020 costs correctly but did not calculate the trend correctly. Another common mistake was to calculate 2018 costs with the annual maximum, then trend that value to 2020. No credit was given for this response, as this suggests the candidate does not understand the concept of an annual maximum.
6. Continued

<table>
<thead>
<tr>
<th>Percent of Members</th>
<th>No Annual Max</th>
<th>$1,000 Annual Max</th>
<th>$2,000 Annual Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.00%</td>
<td>0.00</td>
<td>$0*(1+2%)^2 = 0.00</td>
<td>0.00</td>
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</tr>
</tbody>
</table>

Average: 277.10 288.29 256.50 265.25 271.10 281.81

Trend with $1,000 annual max: \( \sqrt{265.25 / 256.50} - 1 = 1.69\% \)

Trend with $2,000 annual max: \( \sqrt{281.81 / 271.10} - 1 = 1.96\% \)

(d) Critique the analyst’s recommendation for each variable and level. Justify your response.

**Commentary on Question:**

Candidate performance was mixed on this part. Some candidates simply stated there should be more levels – this response was given minimal credit because, while true, it does not show whether the candidates understood the impact of these factors on dental claims costs.

(i) **Member age:** factors are appropriate, since young adults generally utilize fewer services and less expensive services than older adults

(ii) **Group size:** factors are not appropriate, since smaller groups are generally higher cost, as they are more likely to choose benefits for specific employees; factors would be appropriate if they were switched

(iii) **Occupation:** factors are not appropriate, since employees of unskilled industries tend to utilize dental services less than those of professional industries; factors would be appropriate if they were switched

(iv) **Participation:** factors are appropriate, since lower participation tends to result in higher cost due to anti-selection