# GH DPA Model Solutions
# Fall 2021

## 1. Learning Objectives:

5. The candidate will understand how to apply principles of pricing, risk assessment and funding to an underwriting situation.

**Learning Outcomes:**

(5e) Recommend retention (administrative expenses, claims expenses, profit margin, etc.) when underwriting a group

**Sources:**

Best Estimate Assumption for Expenses, CIA Educational Note, Nov 2006, pages 19-39

**Commentary on Question:**

*This question tested the candidate's knowledge of the calculation and utilization of expense assumptions. Well-prepared candidates earned most of the credit on parts (a), (b) and (e). Part (c) seems to have been particularly challenging.*

**Solution:**

(a) List the steps for completing an expense review.

**Commentary on Question**:

*Candidates were expected to list the steps below. Most candidates did well on this portion.*

- Determine the scope of the expense study;
- Collect the expense data;
- Check the consistency of the expense data with internal and external reports;
- Determine which expenses will be excluded from the determination of the best estimate assumption for expenses;
- Determine the expense categories to be used;
- Determine the unit expense bases to be used;
- Classify expenses to the expense categories;
- Allocate expenses to the expense categories;
- Determine the unit expenses; and
- Perform reasonability checks on the results of the study.

## 1. Continued

(b)

(i) Describe the categories of expenses to consider in expense studies.

(ii) Describe unit measurements that can be used for each expense category.

**Commentary on Question**:
*Candidates received points separately for describing the categories and for describing at least <u>two</u> measurements for <u>each</u> identified category.*

Part (i)

- Acquisition – expenses related to marketing and selling policies (to both new and existing customers)
- Administration – expenses related to the insurer's operations; can include billing, collections, general management, monitoring and reporting
- Benefits – expenses related to validating eligibility for and paying benefits/claims
- Asset/Investment – expenses related to managing the insurer's investment portfolio
- Overhead – general expenses not included elsewhere; can include executive management, actuarial, legal, HR, IT, etc.

Part (ii)

- Acquisition unit measurements can include number of policies issued, number of policy applications, sales commission, certificates issued, benefit amount, payment amount, or issue premium
- Administration unit measurements can include number of in-force policies, certificates in force, service commission, premium income, number of billings, number of terminations, number of riders, deposits, and face amounts
- Benefits unit measurements can include number of claims, benefit amount, number of termination claims paid, policy liability, fund value
- Asset unit measurements for asset expenses can include market value, acquired value, disposal value, number of policy loans, mortgage payment, and bond interest
- Overhead unit measurements can include number of policies in force, certificates in force, premium income, fund value, surplus, required capital, employees, percentage of non-overhead expenses

## 1. Continued

(c) Describe considerations when allocating expenses for underwriting activities.

**Commentary on Question**:
*This part focused on the unique considerations when developing underwriting expenses. A full-credit response would demonstrate understanding of the unique elements of underwriting expenses and, particularly, the distinction between policies submitted and policies placed. No credit was given to candidates who simply identified considerations in allocating or categorizing expenses.*

The key considerations are:

- Was underwriting priced for in the existing product?
- Is the expense considered an acquisition expense per the Standards of Practice?
- The unit expense for underwriting is typically measured per policy issued, per policy and per thousand issued, per policy issued within premium bands.
- Expenses related to "declined" policies are usually spread over all "placed" policies.
- Expenses related to substandard ratings may be percentage of the extra premium charged or spread over all substandard policies.

(d) Compare and contrast considerations for applying expenses when setting premium rates for:

- Individual disability insurance
- Group health insurance

**Commentary on Question**:
*Candidates frequently overlooked that they were asked to provide both similarities <u>and</u> differences. Candidates who only provided similarities or only provided differences were given partial credit. The question specified expense considerations and not contract provisions associated with these coverages. Credit was given for additional items relevant to the topic.*

<u>Differences</u>

- Individual disability may be unitized per $100 of coverage, or per claim paid
- Disability expenses are often much higher in the beginning durations, when management of the claim is intense. Durational adjustments may be considered in unit expense development.
- Disability claims may have additional expense-incurring activities such as rehabilitation, evidence review, termination/ death, termination review, subrogation, litigation

## 1. Continued

- Disability claims may have re-checks
- Disability claim unit expenses could be the sum of expense per initial claims, expense per payment, expense per adjudication re-check, expense per $100 of claim, expense per litigated case
- Group health expenses and claims may be priced separately by province or state
- Group health may have unit expense measured per policy
- Group health expense may be limited by the ACA
- Group health may have expenses combined to avoid collecting data that is too detailed

Similarities

- For both, some expenses are incurred at the organizational level, such as corporate overhead
- For both, expenses can include HR, IT, Legal, and other corporate expenses
- For both, allocation of expense methodologies may include transaction-based, activity-based, time study based, in force based, staff based, or allocated across product lines
- For both, the expense study steps for collecting, reviewing, and categorizing data remain the same

(e) Calculate the required adjustment to premium. Show your work. State your assumptions.

**Commentary on Question**:
*The ideal answer incorporated both the loss ratio and the expenses required adjustments. Multiple approaches to calculating the impact were accepted. Full credit required demonstrating how both elements were considered and providing an explanation adequate to allow an independent actuary to validate the work.*

Target loss ratio: 70%
Actual loss ratio: 75%

Current expense load: 30% (sum of the administration, claim adjudication, commissions, premium taxes, risk and profit)
Proposed expense load: 30.8%

Restated target loss ratio assuming the increase in expense load: 69.2%

Required rate adjustment = 75/69.2 -1 = 8.38%

## 2. Learning Objectives:

4. The candidate will understand how to evaluate the effectiveness of different provider reimbursement methods from both a cost and quality point of view.

**Learning Outcomes:**

(4b) Evaluate standard contracting methods from a cost-effective & quality perspective.

(4c) Understand contracts between providers and insurers.

(4d) Understand accountable care organizations and medical patient home models and their impact on quality, utilization and costs.

**Sources:**

GHDP-119-18: Physician Remuneration Options (pp. 3-11)

Provider Payment Arrangements, Provider Risk, and Their Relationship with Cost of Healthcare (excluding Appendices)

**Commentary on Question:**

*This question tested the candidate's understanding of Alternative Payment Plans, their structure, and the overall goals each is trying to accomplish. To receive full credit, candidates needed to demonstrate a thorough understanding of different Alternative Payment Plans and be able to describe each from the perspective of the payer and provider. Candidates generally did well on the question.*

**Solution:**

(a) Describe the importance, in the context of an Alternative Payment Plan (APP), of:

(i) Capitation payments.

(ii) Shadow fee-for-service billing.

(iii) New patient incentives.

(iv) Block funding.

**Commentary on Question**:

*To receive full credit on Part (a) candidates needed to demonstrate a definitional understanding of each subpart, and the ultimate importance/objective behind each subpart.*

(i) The physician will receive a guaranteed fixed capitation payment for the comprehensive annual care of a rostered patient, in lieu of FFS payments. Overall, it emphasizes efficient care of the rostered members as provider profits decrease with higher utilization.

## 2. Continued

(ii) Physicians participating in an APP with capitation must also submit FFS invoices for all services provided, despite payment being disconnected from the invoices themselves. The MoH requires this information for evaluating patient access and utilization under the various APP.

(iii) Refers to a fixed bonus to physicians who accept "orphaned" patients as new patients into their practice, which encourages physicians to take on new patients instead of sticking to their known (potentially healthy) patient roster. Expanding primary care in this manner will reduce overall costs to the system with earlier interventions.

(iv) Physicians receive a guaranteed payment to provide medical services for patients in a specific location or region for a defined interval of time. It is offered to physicians who work in rural and remote areas where they would not receive adequate remuneration if they had to rely solely on FFS billing, incentivizing physicians to fill the need for medical coverage in these areas.

(b) Propose two payment arrangements for Group 1 that minimize DEF's utilization risk and may be acceptable to Group 1. Justify your response.

**Commentary on Question**:
*For full credit on part (b) candidates needed to suggest two arrangements that would be accepted by a physician group that has acknowledged that they do not manage patient utilization, and state why it would be accepted and how it would minimize DEF's utilization risk. Many candidates received partial credit on part (b) as many either did not offer solutions that fit both criteria or failed to justify their responses from the perspective of both Group 1 and DEF. Credit was given for additional solutions as appropriate.*

DRG/case rate – Group 1 is paid a flat rate based on the patient diagnosis often with outlier protections. Group 1 would be acceptable to such an arrangement as they are paid per admission; however, they are incentivized to reduce the length of stay and therefore limiting DEF's utilization risk.

Bundled payments – Group 1 is paid a flat rate based on an episodic need of the member. Group 1 would be acceptable to such an arrangement as they are paid per episode; however, they are incentivized to reduce the overall costs within the bundle and therefore limiting DEF's utilization risk.

## 2. Continued

Reference Pricing - In reference pricing, the employer or its health plan stipulates a benefit limit for a specific surgery or service, with the member paying any difference. Group 1 is acceptable as it is still paid FFS; however, DEF's utilization risk is controlled as members will be less likely to use Group 1 as their OOP costs increase.

Pay for Performance - P4P adjusts the payment arrangement to include incentives for higher quality of care and in some cases disincentives for lower quality. Group 1 will be amenable as they will be paid FFS; however, as physicians adhere to the quality metrics, DEF's utilization risk will decrease.

One-sided ACO/one-sided shared savings – An arrangement where Group 1 will be able to share in reductions in total cost of care without sharing in losses; Group 1 is amenable as they will not incur penalties for overutilization, but DEF's utilization risk is limited as Group 1 is incentivized to increase quality and lower costs.

(c) Evaluate the value, if any, of the Year 1 bonus payment due to Group 1. Show your work.

**Commentary on Question**:
*Candidates did very well on Part (c) with most earning full credit. Candidates needed to evaluate all three criteria for full credit as would be appropriate in returning a report of performance to a provider. Partial credit was awarded for candidates who did not check the third criteria after determining Group 1 failed the second criteria.*

Criteria 1: Total episode costs must decrease 2% between Year 0 and Year 1
Total Episode Cost = sumproduct( % Total Episodes * Cost)
Year 0 Cost = (10% * $23,000) + (48% * $35,000) + (42% * $40,000) = $35,900
Year 1 Cost = (15% * $24,000) + (47% * $34,500) + (38% * $40,000) = $35,015
Decrease = Year 1 Cost / Year 0 Cost – 1 = $35,015/$35,900 – 1 = -2.5%
PASS

Criteria 2: Total episode costs must be at least 5% below the national average
Total Episode Cost = sumproduct( % Total Episodes * Cost)
Year 1 APP Cost = (15% * $24,000) + (47% * $34,500) + (38% * $40,000) = $35,015
Year 1 National Cost = (56% * $22,755) + (32% * $32,931) + (12% * $40,226) = $28,108
Cost Ratio = Year 1 APP Cost / Year 1 National Cost – 1 = $35,015/$28,108 – 1 = 24.6%
FAIL

## 2. Continued

Criteria 3: The complication rate must be below 7% in Year 1
Complication Rate = sumproduct( % Total Episodes * Complication Rate)
Year 1 Rate = (15% * 15%) + (47% * 6%) + (38% * 4%) = 6.6%
PASS

Since the APP does not meet criteria 2, they are not eligible for the bonus.

## 3. Learning Objectives:

5. The candidate will understand how to apply principles of pricing, risk assessment and funding to an underwriting situation.

**Learning Outcomes:**

(5b) Understand, evaluate and apply various risk adjustment mechanisms.

(5c) Recommend strategies for minimizing or properly pricing for risks.

**Sources:**

Individual Health Insurance 2nd Edition, Chapter 4 – Managing Antiselection

**Commentary on Question:**

*This question dealt with antiselection and measured the candidate's understanding of four different aspects of antiselection: different types, what measures in the ACA addressed antiselection (since underwriting was impacted by rules in the ACA), a short calculation showing the level of premium leakage, and finally how to address antiselection and premium leakage.*

**Solution:**

(a) Describe the following types of antiselection:

(i) External – The antiselection that occurs when someone is choosing to become insured. Those that are sicker or know that they have a condition are more likely to seek insurance. For example, someone who needs dental work is more likely to purchase dental insurance.

(ii) Internal – The antiselection that occurs while a policyholder is insured. When given the choice, healthy policyholders will choose to buy down to less expensive coverage, while sicker members will buy up to richer plans.

(iii) Durational – The antiselection that occurs when a policyholder is determining whether to end insurance coverage. Healthier members are more likely to lapse coverage while sicker policyholders are more likely to retain insurance coverage for the following reasons:

1. Less willing to become uninsured
2. Less likely to find coverage elsewhere (less of a factor post-ACA)
3. More emotionally attached to current insurance

**Commentary on Question**:

*Most candidates did well on this part and were able to both define the type of antiselection and provide a good example of when a policyholder would, in effect, participate in that particular type of antiselection.*

## 3. Continued

(b) List and describe measures included in the Affordable Care Act (ACA) to control antiselection.

**Commentary on Question**:
*Almost all candidates were able to list at least some of the measures included in the Affordable Care Act used to control antiselection – many did not provide a comprehensive list though and provided only 2 or 3 examples. To receive full credit for this question, a candidate needed to both list and describe the measures. Many candidates did not receive full credit as they stopped well short of giving any kind of description of the various measures.*

1. Coverage mandates and premium subsidies
   a. Carrot and the stick approach to increasing participation within health insurance
   b. There are group penalties for employers with over 50 full time equivalents (FTEs) not offering MEC (minimum essential coverage) to EEs (employees)
   c. There is an individual mandate in which individuals are penalized for not having qualified coverage
   d. Certain small group ERs (employers) are rewarded with premium tax credits for offering EEs health insurance
   e. Individuals may qualify for federal subsidies on exchanges to encourage them to obtain coverage

2. Aligning rules on and off exchanges
   a. This is done because the exchanges created different types of risk and antiselection for insurers, and encourages insurers to treat both populations equally without opportunity for gaming the system
   b. Policies on and off the exchange must be in the same risk pool and have identical rates
   c. Policies on and off exchange must have identical broker and agent commissions/fees
   d. Policies on and off exchange must not use marketing practices designed to discourage unhealthy risks from signing up
   e. Policies on and off exchange must spread exchange fees across the risk pool
   f. Open enrollment periods must align for the plans
   g. Plans on the exchange must offer at least 1 gold and 1 silver plan

## 3. Continued

3. Open enrollment periods
   a. There is a designated open enrollment period each year in the individual market
   b. This means members cannot simply get coverage any time they know they are about to incur expenses limiting antiselection

4. Minimum benefit levels
   a. Qualified health insurance must be at least bronze tier level (60% actuarial value)
   b. This means people cannot go out and get "health insurance" that provides less than minimal coverage and be considered exempt from penalties which healthy risks would likely do

5. The 3 R's - Risk adjustment, risk corridors and reinsurance
   a. Risk corridors were temporary and limited the risk for the carrier
   b. Reinsurance is meant to stabilize by protecting from large claims
   c. Risk adjustment is permanent and each carrier pays or receives based on the risk of their population

(c) Calculate the premium leakage. Show your work. State your assumptions.

**Commentary on Question**:
*Most candidates were able to calculate the average Premium Renewal. Common mistakes were not calculating the Renewal Claims, or mistaking buydown for premium leakage.*

| | Distribution | Current Premium | Claims |
|---|---|---|---|
| Healthy | 80% | $75.00 | $100.00 |
| Unhealthy | 20% | $75.00 | $200.00 |
| Average (current) | | | $120.00 |

Premium Leakage = difference of expected claims and expected premium

| | Distribution | Current Premium | Renewal Premium | Renewal Claims |
|---|---|---|---|---|
| Healthy | 80% | $75.00 | $85.50 | $95.00 |
| Unhealthy | 20% | $75.00 | $90.00 | $200.00 |
| Average (new) | | | $86.40 | $116.00 |
| **Amount of Premium Leakage= $116.00 - $86.40** | | | | **$29.60** |

## 3. Continued

(d) Develop a plan to reduce premium leakage. Justify your response.

**Commentary on Question**:
*Most candidates did not have a good understanding of how to address premium leakage. Many suggested changes to benefit structure (changing deductibles or cost sharing so the plans were more similar), or adding a load to Plan A – which would only exacerbate the problem.*

Adding a selection load to Plan B would serve to decrease the premium differential between the two plans. This would help to reduce the premium leakage as some of the healthier members would lose the incentive to buy down to the leaner plan.

## 4. Learning Objectives:

4. The candidate will understand how to evaluate the effectiveness of different provider reimbursement methods from both a cost and quality point of view.

**Learning Outcomes:**

(4a) Calculate provider payments under various reimbursement methods.

(4b) Evaluate standard contracting methods from a cost-effective & quality perspective.

(4c) Understand contracts between providers and insurers.

**Sources:**

Essentials of Managed Health Care, Chapter 4: The Provider Network

**Commentary on Question:**

*Commentary listed underneath question component.*

**Solution:**

(a) Identify characteristics that impact a health plan's network access requirements.

**Commentary on Question**:

*Candidates generally did well on this part of the question and received full credit for providing the items.*

- Need to improve the network's size to effectively compete against a larger plan
- Expansion of an HMO's service area
- The need to recruit new PCPs in areas where the plan's current PCPs have closed their practices to new members
- The need to improve access in areas with high concentrations of members/geography
- The need to have a network for an entirely new type of plan such as MA or managed Medicaid plan
- To satisfy a state or federal requirement to improve access to PCPs following a market conduct survey / network adequacy
- The need to contract with physicians who use a newly contracted hospital

(b) Describe considerations of the typical contract negotiation process.

**Commentary on Question**:

*Most candidates struggled with this part and only received partial credit.*

## 4. Continued

- Plan management must consider availability of choices based on competitive advantage
- Plan management should also consider cost of providing a wider network
- Several back-and-forth proposals occur between the plan and provider / negotiate
- Plan must consider profitability of certain service lines and procedures
- Each party will use its own data to come with proposals and counterproposals
- Disclosure of data to the other party is often done strategically
- Each party is expected to have expertise to understand impact of proposed terms
- First year of agreed upon contract is considered the "base year"
- Payments for subsequent years of a contract are based on the first year and often increase by a percentage amount / length of contract

(c) Calculate the reimbursement Royale Health would owe for services provided in 2020 by:

(i) Lynd.

(ii) Paloma.

Show your work.

**Commentary on Question**:
*Candidates generally performed well on this part and received full credit. Some candidates made minor calculation errors and received partial credit (e.g., did not correctly calculate the case rate + per diem with excess rates)*

- Payment to Lynd / Paloma For Per Diem = ALOS * Per Diem Rate for Each Service
- Payment to Paloma For Case Rate + Per Diem with Excess = Case Rate + Per Diem Rate * max(ALOS - Covered Days, 0)
- Total Payment = Total Admits * Payment Per Admit

**4.** **Continued**

| **Lynd** | **Per Admit** | **Total Admit** | **Payment** |
|---|---|---|---|
| ***NICU – Level I*** | $10,200 | 360 | $3,672,000 |
| ***NICU – Level II*** | $21,000 | 240 | $5,040,000 |
| ***NICU – Level III*** | $25,000 | 180 | $4,500,000 |
| ***NICU – Level IV*** | $30,000 | 180 | $5,400,000 |
| ***Maternity – Normal Delivery*** | $8,000 | 600 | $4,800,000 |
| ***Maternity – C Section*** | $12,000 | 450 | $5,400,000 |
| **Total** | | | **$28,812,000** |

| **Paloma** | **Per Admit** | **Total Admit** | **Payment** |
|---|---|---|---|
| ***NICU – Level I*** | $9,300 | 80 | $744,000 |
| ***NICU – Level II*** | $19,200 | 70 | $1,344,000 |
| ***NICU – Level III*** | $31,500 | 50 | $1,575,000 |
| ***NICU – Level IV*** | $41,400 | 30 | $1,242,000 |
| ***Maternity – Normal Delivery*** | $8,000 | 220 | $1,760,000 |
| ***Maternity – C Section*** | $13,200 | 160 | $2,112,000 |
| **Total** | | | **$8,777,000** |

(d) Recommend modifications Royale Health should propose to the contract with Paloma. Justify your response.

**Commentary on Question**:
*Most candidates received about half credit for this part. Full credit was given for providing two or more of the following modifications with justifications.*

- Use a flat case rate instead of per diem
  - Replace per diem reimbursement model with flat case rate that lowers the overall reimbursement level; this will incent providers to better manage inpatient stays
- Increase covered days for each service without adjusting case rates
  - Services that are subject to a reimbursement schedule on a per diem basis do not provide an incentive to providers to manage the inpatient stay – increase the number of covered days included in the case rate to encourage providers to better manage inpatient stays. Case rate should also consider that not all patients will remain hospitalized for the full duration of the covered days.

## 4. Continued

- Add another tier payment for days excess of covered days
  - Encourage providers to manage days in excess of covered days by introducing a reimbursement rate that decreases with duration
- Add a reimbursement schedule for preferred providers
  - Identify preferred providers (low cost, high quality) and adjust the reimbursement schedule to reward them for performance
- Change the reimbursement schedule to be based on percentage of admits
  - Modify the reimbursement schedule to reflect types of admits – in other words, providers will be encouraged to steer members to normal vaginal delivery over C-section (that is subject to a higher reimbursement level currently).
- Add a pay for performance component
  - Incent and reward providers for the outcome of care rendered (e.g., add in metrics such as readmission rate)
- Add a tiered network arrangement with Lynd and Paloma
  - Designate high performing (low cost, high quality) providers into the "preferred" tier to steer more utilization to those providers

## 5. Learning Objectives:

5. The candidate will understand how to apply principles of pricing, risk assessment and funding to an underwriting situation.

**Learning Outcomes:**

(5a) Understand the risks and opportunities associated with a given coverage, eligibility requirement or funding mechanism.

(5b) Understand, evaluate and apply various risk adjustment mechanisms.

(5c) Recommend strategies for minimizing or properly pricing for risks.

(5d) Describe and apply approaches to claim credibility and pooling.

**Sources:**

Issues in Applying Credibility to Group Long-Term Disability Insurance, 2013, pages 5-15

**Commentary on Question:**

*Commentary listed underneath question component.*

**Solution:**

(a) Describe dynamics that make it difficult to apply credibility when pricing group long term disability (LTD) insurance.

**Commentary on Question**:

*Candidates needed to describe each dynamic to earn full credit. Candidates did very well on this part.*

•Non-independence of claims - some factors may affect multiple claims, such as management of claims or economic volatility
•Heterogeneous claims - different claims may not follow the same patterns, even when pooled
•Competitive pricing pressures - There is pressure to give the experience more credibility than what would be prescribed if a purely theoretical approach were taken, because it is difficult to pursue rate increases on cases that have had good experience in a competitive market environment.
•Claim duration - claim durations can range from one year to several decades long, depending on diagnosis, definition of disability, limitations, and many other factors. On top of this, LTD claim experience tends to be more volatile in the early durations of claim. There is a strong correlation between recoveries and cause of disability in early durations of claim, resulting in recovery patterns in early durations that can vary significantly by cause of disability.
•Benefits from other sources - Benefits from other sources are typically awarded within the first few years of claim, creating irregular payment streams in early durations.

## 5. Continued

•Outlier claims - The reason why these types of outlier claims are challenging to work with is that the statistical probability of a claim of the same magnitude happening again could be very small, because maybe only a fraction of the group are highly paid individuals, but nonetheless these claims do happen.
•Regulatory requirements - Some states have adopted credibility requirements as part of the supervisory process. These requirements may apply to manual rate development, for example modifying existing pricing factors, or to experience rating of LTD products. It can be a challenge for some carriers to meet the required credibility criteria.
•Estimating parameters - Estimating the parameters of a credibility model (like confidence intervals and full credibility thresholds) is often based on a combination of subjective opinion and empirical testing. When the credibility is based on an underlying confidence interval, then the confidence factor (e.g. 85%) and allowable error (e.g. 5%) are usually determined subjectively.

(b) Create a table comparing the credibility level for ABC and XYZ for groups with 50, 100, 300, and 500 lives.

**Commentary on Question**:
*This part was a simple calculation and most candidates received full credit.*

| Lives | ABC | XYZ |
|---|---|---|
| 50 | 0.00% | 1.00% |
| 100 | 0.00% | 4.00% |
| 300 | 77.46% | 36.00% |
| 500 | 100.00% | 100.00% |

(c) Explain reasons why ABC and XYZ may have developed different credibility curves.

**Commentary on Question**:
*Most candidates earned partial credit on this part by describing a few of the following reasons. Only explaining one or two differences received partial credit. Describing the credibility curves rather than explaining reasons why the two companies may have developed different credibility standards did not receive any credit.*

•ABC may have greater confidence in its manual rates, especially for smaller cases
•Management and/or corporate philosophies could prefer the selected approach
•Recent experience between companies could lead to different confidence in experience/manual rates
•Competitive pressures to increase experience credibility
•Underlying benefit design or benefit offset differences

## 5. Continued

•Experience may have more closely compared to manual data, resulting in higher confidence in manual rates than group experience
•Regional differences - variations in population or migration patterns
•Demographic differences or targets could lead to different utilization patterns
•Differences between industries/occupations lead to different experience patterns
•Regulatory requirements impacting what is or is not allowed

(d) Describe reasons actual claims may deviate from:

(i) The insurer's manual rates.

(ii) The group's prior experience claims.

**Commentary on Question**:
*The responses for sub-parts (i) and (ii) overlapped quite a bit. Because of this, most candidates were able to identify a few reasons such as demographic and external factors and receive at least partial credit. Credit was given if an answer was provided in either or both parts. For full credit, a candidate needed to describe at least four reasons total with at least one coming from (i) and (ii).*

(i) Deviation from manual rates:
•Manual rates are based on pooled experience which isn't necessarily reflective of a single group
•Underwriting selection wear-off
•Inaccurate manual rating factors
•Distribution system - association groups vs single employer
•Changes in the demographic mix of employees over time can alter disability experience trends
•External factors like economic recessions can impact the experience
•Changes in underwriting or claim management practices can shift the experience
•Higher volatility in smaller groups
•Changes in legislation
•Outlier claims

(ii) Deviation from prior experience:
•Durational change - change in definition
•Administration system changes - claim processing speed, fraud, waste, etc.
•Changes in plan design may result in different claims experience
•Changes in the demographic mix of employees over time can alter disability experience trends
•External factors like economic recessions can impact the experience
•Changes in underwriting or claim management practices can shift the experience
•Higher volatility in smaller groups
•Changes in legislation
•Outlier claims

## 5. Continued

(e) Recommend adjustments to the credibility formulas used by ABC and XYZ. Justify your response.

**Commentary on Question**:
*Candidates did fairly well on this part. At least two adjustments with justification were needed for full credit. Credit was given for most recommendations if they were properly justified.*

Both ABC and XYZ need to increase their threshold for full credibility as 500 lives is not enough. LTD needs a lot of lives to be fully credible, since it occurs over long durations, is sensitive to economic cycles, and claims are not independent. 500 lives should not produce 100% credibility.

ABC should remove the 250 life minimum for credibility, as a single additional life (250 versus 249) can increase the credibility from 0% to 71%. Providing credibility to smaller groups will also mitigate adverse selection in the market place where groups are seeking the most competitive rates for their employees.

## 6. Learning Objectives:

4. The candidate will understand how to evaluate the effectiveness of different provider reimbursement methods from both a cost and quality point of view.

**Learning Outcomes:**

(4b) Evaluate standard contracting methods from a cost-effective & quality perspective.

(4d) Understand accountable care organizations and medical patient home models and their impact on quality, utilization and costs.

**Sources:**

GHDP-123-19: Physician Cost Profiling—Reliability and Risk of Misclassification

GHDP-125-20: Duncan. Healthcare Risk Adjustment 2nd Edition. Chapter 22.

**Commentary on Question:**

*Commentary listed underneath question component.*

**Solution:**

(a) List ways provider group-based accountable care organizations (ACOs) generate savings.

**Commentary on Question**:

*Candidates generally performed well on part a), with the majority earning full credit.*

- The practice will implement "care coordination" to manage the care of patients who need additional services
- Access to integrated medical records and consistent management by the physician will reduce the need for tests
- The ACO will develop a network of efficient providers for referrals and will limit the use of less efficient and more expensive providers
- The focus on quality will result in fewer unnecessary services, and by emphasizing preventive services, lead to later savings as population health is improved

(b) Compare and contrast ACOs and health maintenance organizations (HMOs).

**Commentary on Question**:

*Full credit was given if the candidate listed a couple of similarities and differences. Reasonable responses not listed below were also accepted.*

## 6. Continued

Compare:
- Both ACOs and HMOs have patients assigned to them
- Both require providers to be accountable for providing quality care, reducing utilization, and convincing the patient not to seek care outside of the ACO provider network

Contrast:
- ACO is provider-based and less restrictive both in terms of network enrollment and utilization management
- Patient attribution in an ACO can happen through an algorithm whereas the HMO has positive enrollment and contractual ties

(c) Compare and contrast ACOs and typical disease management (DM) programs.

**Commentary on Question**:
*Full credit was given if the candidate listed a couple of similarities and differences. Reasonable responses not listed below were also accepted.*

Compare:
- Both rely on data and analytical resources to support their operations
- Both are focused on changing patient behavior in a way that produces a measurable financial outcome

Contrast
- ACOs are provider sponsored, whereas DM programs are typically sponsored by insurers
- ACOs typically lack the economies of scale and bandwidth to manage all the needs of a chronically-ill patient panel
- Data and analytics available to ACOs are less mature than those used by DM companies and the ACOs may have incomplete records
- Provider-driven programs (ACOs) may emphasize quality improvement first, whereas insurer-directed programs (DM) emphasize cost savings as well as quality improvement.

(d) Explain in the context of physician cost profiling:

(i) Validity.

(ii) Reliability.

## 6. Continued

**Commentary on Question**:
*Candidates had more difficulty on part (d). Many candidates provided a non-descriptive definition, for which credit was not given (e.g., "Reliability represents how reliable the measure is."). Partial credit was awarded for part (ii) for candidates supplying the individual physician formula for reliability.*

(i) Validity: indicates how well a measure represents the phenomenon of interest – indicates whether the method of assigning episodes of care to physicians and creating summary scores accurately represents physicians' economic performance

(ii) Reliability: the proportion of variability in a measure that is due to real differences in performance – determined by three factors: (1) the number of observations, (2) the variation among physicians in their use of resources to manage similar episodes, and (3) random variation in the scores

(e)

(i) Critique the physician cost classifications.

(ii) Recommend changes to the cost classifications.

Show your work. Justify your response.

**Commentary on Question**:
*Many candidates had difficulty with this part, making general statements about physician cost profiling without performing any supporting calculations. In order to receive full credit, candidates were expected to:*

- *Calculate the unit cost for each physician*
- *Acknowledge the presence of outliers on both the low ($50 per episode) and high ($10,000 per episode) ends and exclude those physicians from being considered "low cost"*
- *Determine that in order to be classified as "Low Cost" the physician should have (1) a low unit cost (for example, $1,100), (2) a high reliability score (for example, greater than 0.7), and (3) a sufficient number of episodes (for example, greater than 1,000)*
- *Recommend changes to the classifications, if needed, for each physician based on the criteria above*

*Other opportunities for partial credit in both parts (i) and (ii) include discussion of adequate reliability being in the range of 0.7 to 0.9, discussion of the low volume issue, and discussion of the outlier issue.*

## 6. Continued

(i) Critique:

- Physician A: classified as low cost but reliability score is below commonly used thresholds (0.7 and 0.9)
- Physician C: classified as low cost, but unit cost is not amongst the lowest
- Physician F: classified as low cost, but unit cost is an outlier (use Winsorizing)
- Physician K: classified as not low cost, which appears to be an error based on reliability score > 0.7 and unit cost = $1,100
- Physician M: classified as low cost but reliability score is below commonly used thresholds (0.7 and 0.9)
- Physician Z: low volume (not reliable)

(ii) Recommend changes:

- Physician A: reclassify as not low cost due to low reliability score
- Physician C: reclassify as not low cost due to not having the lowest unit cost
- Physician F: reclassify as not low cost due to unit cost outlier
- Physician K: reclassify as low cost due to acceptable reliability score and low unit cost
- Physician M: reclassify as not low cost due to low reliability score
- Physician Z: reclassify as not low cost due to low episode count

## 6. Continued

| Physician | Episode Count ('000s) | Total Cost ('000s) | Reliability Score | Cost Classification | Unit Cost | Revised Cost Classification |
|---|---|---|---|---|---|---|
| A | 4.1 | $4,510 | 0.44 | Low Cost | $1,100 | Not Low Cost |
| B | 1.6 | $80 | 0.7 | Not Low Cost | $50 | Not Low Cost |
| C | 1.5 | $3,150 | 0.8 | Low Cost | $2,100 | Not Low Cost |
| D | 0.6 | $660 | 0.02 | Not Low Cost | $1,100 | Not Low Cost |
| E | 2.9 | $29,000 | 0.32 | Not Low Cost | $10,000 | Not Low Cost |
| F | 2.1 | $105 | 0.89 | Low Cost | $50 | Not Low Cost |
| G | 2.1 | $4,410 | 0.5 | Not Low Cost | $2,100 | Not Low Cost |
| H | 1.4 | $2,940 | 0.26 | Not Low Cost | $2,100 | Not Low Cost |
| I | 2 | $4,200 | 0.3 | Not Low Cost | $2,100 | Not Low Cost |
| J | 1.7 | $1,870 | 0.16 | Not Low Cost | $1,100 | Not Low Cost |
| K | 3.2 | $3,520 | 0.8 | Not Low Cost | $1,100 | Low Cost |
| L | 3.3 | $6,930 | 0.48 | Not Low Cost | $2,100 | Not Low Cost |
| M | 4.1 | $4,510 | 0.06 | Low Cost | $1,100 | Not Low Cost |
| N | 1.9 | $5,890 | 0.76 | Not Low Cost | $3,100 | Not Low Cost |
| O | 4.4 | $44,000 | 0.12 | Not Low Cost | $10,000 | Not Low Cost |
| P | 1.8 | $1,980 | 0.89 | Low Cost | $1,100 | Low Cost |
| Q | 0.8 | $2,480 | 0.3 | Not Low Cost | $3,100 | Not Low Cost |
| R | 2.5 | $5,250 | 0.79 | Not Low Cost | $2,100 | Not Low Cost |
| S | 4.3 | $9,030 | 0.1 | Not Low Cost | $2,100 | Not Low Cost |
| T | 3 | $6,300 | 0.97 | Not Low Cost | $2,100 | Not Low Cost |
| U | 0.8 | $1,680 | 0.28 | Not Low Cost | $2,100 | Not Low Cost |
| V | 4.4 | $13,640 | 0.52 | Not Low Cost | $3,100 | Not Low Cost |
| W | 1.3 | $4,030 | 0.38 | Not Low Cost | $3,100 | Not Low Cost |
| X | 1.7 | $5,270 | 0.45 | Not Low Cost | $3,100 | Not Low Cost |
| Y | 2.3 | $23,000 | 0.02 | Not Low Cost | $10,000 | Not Low Cost |
| Z | 0.3 | $330 | 0.7 | Low Cost | $1,100 | Not Low Cost |

## 7. Learning Objectives:

5. The candidate will understand how to apply principles of pricing, risk assessment and funding to an underwriting situation.

**Learning Outcomes:**

(5a) Understand the risks and opportunities associated with a given coverage, eligibility requirement or funding mechanism.

**Sources:**

Group Insurance, Skwire, Daniel D., Ch. 31: Managing Selection in a Multiple-Choice Environment

**Commentary on Question:**

*Candidates generally did well on Parts b and c, often earning full credit on the calculation portions of this question. For Parts a and d, candidates' responses often didn't tie to the questions asked. For parts e and f, candidates who performed well on Part e did well on Part f.*

**Solution:**

(a) Describe how claims experience is evaluated for the following insurance products:

(i) Group Life

(ii) Disability Income

(iii) Medical

**Commentary on Question**:

*On this part, candidates often described types of experience rather than <u>how</u> the claims experience is evaluated.*

(i) Group Life: Group life claim experience tends to be relatively volatile, due to a low frequency and high severity of loss, so looking at several years of data is appropriate in evaluating the experience.

(ii) Disability Income: Group disability income experience also reflects low claim frequencies but large potential liabilities. Like with life, multiple years of data, typically 3-5 years, is used to evaluate experience.

(iii) Medical: For larger groups, typically one year of experience is sufficient to evaluate experience. Adjustments are made for trend.

## 7. Continued

(b) Calculate the expected 2021 medical claims cost per employee for DEF. Show your work.

**Commentary on Question**:
*Most candidates earned full credit on this part. Common errors include over-trending and forgetting to apply selection factors.*

| | Calculation | HMO | PPO | POS |
|---|---|---|---|---|
| (a) 2020 Claims per Employee | | $10,000 | $10,000 | $10,000 |
| (b) Relative Benefit Level | | 0.80 | 0.95 | 1.05 |
| (c) Provider Discount | | 0.85 | 0.95 | 1.10 |
| (d) Utilization Savings | | 0.80 | 0.90 | 1.15 |
| (e) Annual Trend | | 1.10 | 1.12 | 1.15 |
| (f) Selection Factor | | 0.80 | 0.95 | 1.20 |
| (g) 2021 claims prior to Mix | =(a)*(b)*(c)*(d)*(e)*(f) | $4,787 | $8,642 | $18,330 |
| (h) Projected Enrollment Mix | | 25% | 50% | 25% |
| **(i) 2021 claims per employee** | =sumproduct(g,h) | **$10,100** | | |

(c) Calculate the revised medical claims cost per employee for DEF based on the actual enrollment. Show your work.

**Commentary on Question**:
*Like part b, most candidates earned full credit on part c.*

| | Calculation | HMO | PPO | POS |
|---|---|---|---|---|
| (a) 2021 Claims before Enrollment Mix | (g) from Part B | $4,787 | $8,642 | $18,330 |
| (b) Actual Enrollment Mix | | 20% | 40% | 40% |
| **2021 claims per employee** | =sumproduct(a,b) | **$11,746** | | |

(d) Describe elements of a well-designed risk-sharing agreement.

**Commentary on Question**:
*Few candidates earned full credit on this part. Many focused on risk transfer between the three products, quality metrics, or funding type. Partial credit was earned by describing a gain/loss formula and a claims benchmark.*

## 7. Continued

A well-designed risk-sharing agreement should include a fair formula and reasonable caveats, such as:

- Adjustments for changes in demographics, or similar factors that are beyond the control of the administrator or network manager,
- A symmetric gain/loss sharing formula
- A risk-free corridor around the target claim cost (such as 3%), and
- Some form of pooling of experience

(e) Propose a risk-sharing agreement for 2021.

**Commentary on Question**:
*Candidates who performed well on this part incorporated elements from their response to part d, such as a gain/loss percentage and a benchmark. A common mistake was focusing on shifting members from one product to another in order to lower claims cost instead of risk-sharing.*

Benchmark equal to the Projected Claims PMPM in Part B
Minimum shared savings/loss rate of 2% of Benchmark
Shared savings and loss rate of 50%

(f) Calculate the risk-sharing agreement results for 2021 based on your proposal in part (e). Show your work. State your assumptions.

**Commentary on Question**:
*Candidates who had an acceptable proposal in part e generally scored full credit on this part, as long as they followed their proposal. Candidates who failed to answer part e didn't do well on part f.*

| | | |
|---|---|---|
| Benchmark | $10,100 | |
| Actual Cost | $11,746 | |
| Savings/(Loss) | -$1,646 | Benchmark-Actual |
| Minimum Savings/Loss | -$202 | Benchmark * 2%, threshold met |
| Shared Savings/Loss % | 50% | |
| **Shared Losses** | **-$823** | |

## 8. Learning Objectives:

4. The candidate will understand how to evaluate the effectiveness of different provider reimbursement methods from both a cost and quality point of view.

5. The candidate will understand how to apply principles of pricing, risk assessment and funding to an underwriting situation.

**Learning Outcomes:**

(4a) Calculate provider payments under various reimbursement methods.

(4c) Understand contracts between providers and insurers.

(5a) Understand the risks and opportunities associated with a given coverage, eligibility requirement or funding mechanism.

**Sources:**

GHDP-135-20: Value Based Pharmacy: A Canadian Example

"Provider Payment Arrangements, Provider Risk, and Their Relationship with Cost of Healthcare" (excluding Appendices)

"Level Funding: An Alternative to ACA for Small Groups", Health Watch, May 2016

**Commentary on Question:**

*Candidates performed very well on this question overall. Candidates scored best on part (c) and had the most difficulty with part (b).*

**Solution:**

(a) List and describe the categories of quality measures established by Green Shield Canada in its Value Based Pharmacy Initiative.

**Commentary on Question**:

*Some candidates struggled to list the three categories, but were usually able to describe the quality measures.*

(1) Medication Adherence - A measure called Proportion of Days Covered (PDC) is used to determine the proportion of claimants that are highly adherent to their treatment, for each of the following disease states: Hypertension, cholesterol, and diabetes
(2) Disease Management - These measures look at whether patients are being treated according to current evidence and recommended clinical guidelines.
(3) Patient Safety - High risk medication use in the elderly: Measures the proportion of patients 65 and older that are prescribed high risk medications that have a more significant risk of causing a severe health problem.

## 8. Continued

(b) Describe advantages and disadvantages of level funded arrangements for employer groups.

**Commentary on Question**:
*Candidates had the most difficulty listing the disadvantages. If candidates mistakenly cited the list of disadvantages for self-insured arrangements, credit was not awarded. Other valid advantages and disadvantages cited outside of the below were awarded credit as well.*

Advantages:

- The group will avoid premium taxes, state health coverage mandates and certain ACA-related fees
- The group will directly benefit from its favorable claims experience
- The group will forgo paying insurance company risk charges
- The group will pay fixed monthly payments that mimic a fully insured product

Disadvantages:

- Level funded products are not necessarily easy for the group to understand or for the insurer to administer
- Competition and choice is limited. A significant number of insurers do not currently offer stop-loss coverage and/or have very little experience offering stop-loss coverage to smaller groups
- Most of the small groups that would potentially benefit from a level funded product will not have much, if any, familiarity with self-funding or stop loss.
- Level funded arrangements are relatively immature for smaller groups, and may be constrained or prohibited by regulators.

(c) Calculate the change in reimbursement for Drug A in 2022 under the alternative reimbursement arrangement. Show your work.

**Commentary on Question**:
*Some of the common issues observed with responses were as follows:*

- *Cost per member*
  - *Not applying trend to correct year*
  - *Not using 5 members*
  - *Assuming a cost per script*
- *Cost per script*
  - *Incorrect trend*
  - *Multiplying by number of employees*

**8. Continued**

**Current Arrangement:**

| Year | Members | Cost Per Member | Total Cost |
|---|---|---|---|
| 2020 | 5 | $3,000 | $15,000 |
| 2021 | 5 | $3,150 | $15,750 |
| 2022 | 5 | $3,308 | **$16,538** |

2022 Cost per Member = $3,000 * 1.05^2 = $3,308
Total Cost = Members * Cost Per Member

**Proposed Arrangement:**

| Year | Scripts | Cost per Script | Total Cost |
|---|---|---|---|
| 1H2022 | 45 | $46.80 | $2,106 |
| 2H2022 | 45 | $48.67 | $2,190 |
| | | **2022 Total Costs =** | **$4,296** |

2H2020 Cost per Script = $46.80 * 1.04 = $48.67
2022 Total Costs = $2,106 + $2,190 = $4,296

Change in costs under the proposed arrangement =
$4,296 - $16,538 = -**$12,241**

(d) Assess how the change in reimbursement for Drug A will impact LMN's:

(i) Paid claims fund.

(ii) Specific stop loss.

(iii) ASO fee.

**Commentary on Question**:
*To receive credit, responses must be based on the candidate's answer to part (c). Candidates were expected to provide justification for their answer.*

(i) A decrease in expected claims will cause the paid claims fund to decrease. The paid claims fund is used to cover the costs of the group's expected non-stop loss claim costs. In order to calculate the paid claims fund, the group's projected paid claim costs include expected changes in costs due to annual trend and contract changes.

**8. Continued**

(ii) The cost of specific stop loss may decrease. Moving to the proposed arrangement will cause a 74% decrease in each utilizing member's costs for Drug A. This means they will be less likely to hit the specific attachment point which may generate a reduction in stop loss premiums.

(iii) A change in expected claim costs will have no impact on the ASO fee.