GH VRU Model Solutions
Spring 2025

1. Learning Objectives:

1. The candidate will understand and apply valuation principles for insurance contracts.

Learning Outcomes:

(1b) Explain the limitations and biases of the traditional valuation methods.

(1c) Calculate appropriate claim reserves given data.

(1d) Reflect environmental factors in reserve calculations (trend, seasonality, claims processing changes, etc.).

(1g) Apply applicable standards of practice related to reserving.

Sources:

Group Insurance, Skwire, Daniel D., 8th Edition, 2021

- Ch. 39: Claim Reserves for Short-Term Benefits

GHVR-103-16: Health Reserves

Individual Health Insurance, Bluhm., 2nd Edition

- Ch. 6: Reserves and Liabilities

Commentary on Question:

This question is mainly aimed to test candidates general valuation reporting applications and the methods of estimation for claim reserves, understanding the limitation of the traditional methods and the application of alternative methods.

Solution:

(a) Describe how reserving assumptions and considerations differ under various reporting applications.

Commentary on Question:

Candidates performed adequately on this section. The most common reason for not earning full points was the omission of Experience Reporting and Valuation for Acquisition. Candidates may also receive credit for appropriate responses not referenced below.

1. Continued

Solution:
Regulatory Reporting most concerned with solvency, so assumptions should be conservative. Should review regulations and document specific requirements and adjustments made.

GAAP Reporting GAAP reports are concerned with solvency, but place increased emphasis on creating realistic earnings patterns. Allows actuaries to develop assumptions that are realistic with a provision for adverse deviation

Experience Reporting For Employers and Providers typically involve less sophisticated calculation techniques. Incurred claims are often computed using factors applied to paid claims, changes in paid claims, exposures or other summary data.

Valuations for Acquisitions varies widely depending on the size of the block of business and the circumstances surrounding the review. Common to have incomplete data or less than full understanding of issues that affect the liabilities.

(b) Explain how actuaries can address drawbacks when using the development method.

Commentary on Question:
This question was not answered well in general. Most candidates only described 1-2 methods to address the drawbacks. Candidates may also receive credit for appropriate responses not referenced below.

Solution:
Many outside factors can cause development factors to change over time, so other methods should be used to confirm results.

Seasonality can significantly affect completion factors, so factors should be compared to corresponding periods in previous years.

Loss ratios can vary significantly by quarter, so factors should be separately as they relate to each calendar quarter.

Uneven payment patterns or large payments can distort the factors. Large payments can be removed from the table and consider them separately.

(c) List and describe four methods other than the development method for estimating claims reserves.

1. Continued

Commentary on Question:
This question was answered well in general. For full credit, candidates needed to explicitly mention subtracting paid amount from the estimated incurred claims. Candidates may also receive credit for appropriate responses not referenced below.

Solution:
Case reserves
This method develops reserves by estimating the ultimate claims amount for each reported claim and then subtracting the amount already paid against the claims. This is sometimes known as the examiners' method because claims examiners or other similarly qualified personnel attempt to estimate an amount to be paid based on specific information about a claim and historical experience with similar claims.

Projection Methods
Projection methods estimate incurred claims by developing an historical claim rate as a function of membership or other measures of exposure to liability. The most common example is the use of "per member per month" (PMPM) costs. Reserves in this case are estimated by:
1. developing a projected incurred claims cost per unit of exposure,
2. multiplying this value times the exposure base for each period being estimated, and
3. subtraction of known paid claims.

Loss Ratio Methods
This is a form of projection method in which the estimate is based on anticipated loss ratios. The reserves are estimated by:
1. Developing a projected loss ratio based on historical ratios of incurred claims to earned premium or on anticipated loss ratios from pricing or other analysis.

2. Multiplying the loss ratio times exposed earned premium for the projected months.

3. Subtracting known paid claims. This method has similar applications as the projection method, plus other possibilities:

- Situations in which other projection methods are not useable because exposure data is either unavailable or unreliable.
- Situations in which historical claims costs are not available or reliable and for which pricing loss ratios are deemed to be more appropriate.
- Products or carriers for which the targeted loss ratio is an important metric for measuring internal performance.

1. Continued

Tabular Methods
Tabular methods are commonly used to develop the present value of amounts not yet due by applying a continuance table deemed to be predictive of future claims liabilities. This approach to estimation is useful for claims such as disability and long term care for which a claim event triggers a sequence of payments. The continuance table is used to estimate the duration of such payments given the possibility of termination, lapse, mortality or other factors that would curtail payments. These claims are of sufficient duration that interest discounting will be required in developing the estimated liability.

(d) Explain cases where each method described in (c) above is preferred.

Commentary on Question:
This question was answered well in general. Loss Ratio method shares some common applicable situations with Projection method. For full credit, candidates needed to describe the additional cases. Candidates may also receive credit for additional appropriate responses not referenced below.

Solution:

Case reserves: Most often employed to develop claim estimates for very large catastrophic medical claims or liabilities associated with litigated claims. May also be used for STD, Hospital Income, or other such coverages for which the present value of amounts not yet due is easily estimated and not impacted by termination rates or other contingencies.

Projection Methods:
- Coverages where the incidence of claims is too low for other techniques
- Situations where volume of data is insufficient for other methods
- Situations where data is immature or otherwise form a questionable basis for calculations
- Modifications or cross checks to compensate for less credible estimates of most recent incurral months
- Validation of reasonableness of other methods

Loss ratio methods:

- Same applications as projection methods and…
- Situations where other projection methods can't be used because exposure data is unavailable or unreliable
- Situations where historical claim costs are unavailable or reliable and where pricing loss ratios are deemed more appropriate
- Products or carriers where loss ratio is an important metric for measuring performance

1. Continued

Tabular: Useful for claims such as disability and long term care for which a claim event triggers a sequence of payments.

(e) Calculate average completion factors as of 12/31/20X1 for each lag using the following averaging methods:

(i) 3 of last 3

(ii) 4 of last 6

Show your work.

Commentary on Question:
This question was answered well in general.

Solution: See the corresponding Excel file.

2. Learning Objectives:

1. The candidate will understand and apply valuation principles for insurance contracts.

Learning Outcomes:

(1b) Explain the limitations and biases of the traditional valuation methods.

(1d) Reflect environmental factors in reserve calculations (trend, seasonality, claims processing changes, etc.).

(1e) Evaluate data resources and appropriateness for calculating reserves.

(1g) Apply applicable standards of practice related to reserving.

Sources:

Group Insurance, Skwire, 8th Edition, 2021: Skwire 8th ed pgs 698 - 699 (Chapter 40), pgs 665-669 (Chapter 39); ASOP 22

Commentary on Question:

Generally, candidates were successful on this question. However, to obtain full credit candidates had to support their work or reasoning.

Solution:

(a)

(i) Assess the adequacy of the reserves at the beginning of durations 2, 3, and 4 based on the actual to expected (A/E) continuance rates. Show your work.

(ii) Calculate the "Deaths and Recoveries" for durations 2, 3, and 4. Show your work.

Commentary on Question:

Most candidates were successful in part (i). They were able to use the A/E continuance rates to determine reserve adequacy. A few candidates did some calculations for this question, but that was the intention given the A/E factors. For part (ii) few candidates were able to gain full credit. However, many candidates did pick up partial credit for reasonable work provided. A common mistake was not applying the appropriate continuance factor for the claim duration. Candidates were expected to calculate the actual continuance utilizing the Assumed continuance rates and the A/E factors.

2. Continued

- Part (i)
  - A/E Continuance was greater than 1 for durations 2 and 3
  - Reserves will be inadequate
  - A/E Continuance was less than 1 for duration 4
  - Reserves will be adequate
- Part (ii)
  - See Excel

(b)

(i) Describe each consideration in the table above.

(ii) Critique the accuracy of each row in the table above. Justify your answer.

(iii) List and describe considerations of short-term and long-term reserves not identified above.

Commentary on Question:
Generally, candidates were most successful in part (i) of this question. They tended to lose points in part (ii) because they indicated if the table was True or False but did not provide any explanation as to why. Also providing contradictory answers (such as both when the answer was true) did not provide any additional credit for the candidates. Part (iii) was the weakest part of this question. Many candidates listed some considerations but did not describe them adequately.

- Part (i)
  - Claim Expenses are provision for the expenses related to the management and payment of claims incurred but not paid claims.
  - Economic conditions are situations like recessions that may affect (i) interest rates which affects discounting in reserve calculations, (2) claims incidence for elective treatments (deferred due to cost), and (3) claims incidence and duration for products like LTD where people fear the loss of coverage.
  - External influences are environmental influences like epidemics, governmental mandates, and new laws.
  - Interest rates are financial values that affect reserve calculations and usually only apply for long term reserves calculations. Statutory reserves are generally specified by law. Rates for GAAP reserves are generally equal to a company's expected investment income rate on the assets backing its claim reserves.
  - Insurance characteristics include production duration (new/renewal) and claim severity (large vs normal

2. Continued

- Internal company practices are its established process/procedures/practice, staffing, staffing events (vacations, layoffs, unusual weather), and computer systems to which changes may result in fluctuating payment patterns and affect reserve estimates.
- Morbidity Assumptions are the expectations of illness cost progression and are typically in the form of a continuance table that varies based on the type of benefit being reserved and on the purpose for which the reserves are being computed.
- Policy provisions are the specific features of coverage.
- For short term, they include the types of benefits (e.g., medical/dental), utilization incentives, utilization disincentives, and claim size.
- For long term products, they include type of benefit (LTD, LTC) ,COLA, Partial and Residual Benefits, Survivor Benefits, Benefit Integration, Benefit Limitation, Waiver of Premium, Non-Level Daily Benefits.
- These items affect the frequency and severity of claim payment which affects reserves.

- Part (ii)
  - TRUE, Claim Expenses are a long term consideration. However, they are also a short term consideration. Short Term – Accounting standards require recognition of a liability for the administrative expenses related to the incurred but not paid claims. Long Term – Insurers must also make provision for the expenses related to the management and payment of claims.
  - TRUE, Economic Conditions are a short term consideration. Recessions will affect claims for elective treatments but cause an increase in incidences and durations of claim where people fear the loss of coverage.
  - FALSE, External Influences are a short term consideration. Environmental influences like epidemics, governmental mandates, new laws can greatly impact short term claim liability.
  - TRUE, Insurance Characteristics are a short term consideration. In general, new plans will typically have long lags initially, but will typically become shorter after the initial period after issue has passed. Severity of claims may also impact lag.
  - FALSE Interest Rates are long-term consideration where discounting of future benefits back to valuation date is required
  - TRUE, Internal Company Practices are a short term consideration. Fluctuating payment patterns can be caused by staffing practices and staffing events (vacations, layoffs, unusual weather), changes in computer systems, and other company specific practices.

2. Continued

- TRUE, Morbidity Assumptions are a long term consideration. The determination of the appropriate morbidity basis (continuance table) depends on the type of benefit being reserved, and on the purpose for which the reserves are being computed.
- TRUE, Policy Provisions are both short term and long term considerations. Short Term – The types of benefits, utilization incentives, or disincentives, claim sizes in general, and other policy provisions, can dramatically affect the pattern of claim payments. One must consider the frequency of claim payment, as well as the severity of claims. Long Term – Inclusions such as COLA, Partial and Residual Benefits, Survivor Benefits, Benefit Integration, Benefit Limitation, Waiver of Premium, Non-Level Daily Benefits.

- Part (iii)
  - **Controls and Reconciliation** –Ensure the data being used by the actuary reconciles and is consistent with the data and reporting practices used by the accounting department.
  - **Data Integrity** - Unlike the aggregate reserves computed for short-term health benefits, tabular reserves for long-term benefits are heavily dependent on the underlying seriatim claim data. Regular audits should be performed.
  - **Reserve cells** - For medical benefits, reserves for hospital benefits may be estimated separately from those for physician benefits. Can be set up by group size, by medically underwritten vs guaranteed issue, by over 65 vs under 65, by deductible size, by network, or by region.
  - **Seasonality** Claims may increase or decrease significantly at various times of the year and thus affect the reserve levels (e.g., high deductible plans may have different patterns).

(c)

(i) List four analysis methods that could be used to demonstrate asset adequacy on long-term products.

(ii) Describe the situation(s) when each method is typically used to demonstrate asset adequacy on long-term products.

Commentary on Question:
Many candidates were able to get full credit on part (i). However, to earn full credit the candidates needed to describe the situations where each method was used. Many candidates instead explained the methodology rather than provide guidance on when to use it. This cost the candidate full credit in part (ii).

2. Continued

- **Cash Flow Testing** -Cash flow testing is generally appropriate where cash flows vary under different economic scenarios.
- **Gross Premium Reserve Test-**Gross premium reserve test may be appropriate when the testing would emphasize the sensitivity of cash flows arising from liabilities under moderately adverse conditions. For example, this type of method may be appropriate for term insurance backed by noncallable bonds
- **Demonstration of Conservatism** -A demonstration of conservatism may be appropriate when the degree of conservatism in the reserves and other liabilities is so great that the cash flows are covered under moderately adverse conditions. For example, this type of method may be appropriate for a block of accidental death and dismemberment insurance if that block is reserved using conservative interest rates and mortality/morbidity tables.
- **Demonstration of Immaterial Variation** -A demonstration that the risks are not subject to material variation may be appropriate when the cash flow risks have been limited by product design and the investment strategy. For example, this type of method may be appropriate for a non-life contingent payout annuity backed by a cash flow matched asset portfolio.
- **Risk Theory Techniques**- Analysis using risk theory techniques may be appropriate when the risks inherent in products with short-duration liabilities are supported by short-duration assets. Such techniques can be used to measure cash flows for risks that are subject to large fluctuations that arise infrequently since the cash flows arising from liabilities can rarely be matched to the cash flows arising from assets under moderately adverse conditions. For example, this method may be appropriate for risks involving a small number of large individual claims over a short period, such as catastrophe or stop loss coverage.
- **Loss Ratio Methods**.- Loss ratio methods may be appropriate when the cash flows are of short duration. Under these methods, morbidity or mortality costs may be tested under moderately adverse conditions. For example, these methods may be appropriate for certain short-term disability coverages.

3. Learning Objectives:

2. The candidate will understand how to prepare and be able to interpret insurance company financial statements in accordance with U.S. statutory principles and GAAP.

Learning Outcomes:

(2b) Interpret the results of both statutory and GAAP statements from the viewpoint of various stakeholders, including regulators, senior management, investors.

(2c) Project financial outcomes and recommend a strategy.

Sources:

Group Insurance, Skwire, 8th Edition, 2021: Ch 43

Commentary on Question:

Commentary listed underneath question component.

Solution:

(a) Calculate the operating margin for XYZ for 20X1, 20X2, and 20X3. Show your work.

Commentary on Question:

Please refer to the excel file for the commentary and model solution for this subpart of the question.

(b) Calculate an estimate of the projected net income for XYZ for the full 20X4 calendar year. Show your work.

Commentary on Question:

Please refer to the excel file for the commentary and model solution for this subpart of the question.

(c) Your analyst provides you with a projected net gain/(loss) estimate of ($130,747) for XYZ's full 20X4 calendar year.

Critique your analyst's estimate.

Commentary on Question:

Candidates needed to explain why the method was too simple and identify an alternative approach to earn full credit.

Prior years have seasonal patterns of 1Q negative results and 2Q-3Q positive results. Your results are 1Q results of -32,687 loss x 4 = 130,700. Thus your estimate overstates the expected loss.

3. Continued

A better approach would be to apply month over month (or quarter over quarter) relativities on each item from the prior year to produce estimates of each line item and then calculate the full year net income from those.

(d) Describe three ways to improve financial analysis when health care provider expenses are capitated.

Commentary on Question:
Candidates needed to identify all three approaches to earn full credit. Candidates earned partial credit for correctly identifying one or two of the approaches.

The first is to remove such capitated services from both administrative expense and from health benefits. This may be especially appropriate for specialty health services of limited scope, such as mental health and pharmaceutical benefits.
A second approach is to consolidate the economics of the capitated entity. This may be most appropriate in cases of global capitation in which substantially all of the health care benefits are capitated.
A third approach applies when only a subset of the members is subject to global capitation. In that case, one might perform the administrative and health benefit ratios only for the members not subject to capitation.

(e)

(i) Calculate the benefit ratio for 20X1, 20X2, and 20X3. Show your work.

(ii) Identify one question you should ask XYZ to better understand the plan's historical benefit expenses.

Commentary on Question:
Please refer to the excel file for the commentary and model solution for this subpart of the question.

4. Learning Objectives:

3. The candidate will understand how to evaluate the impact of regulation and taxation on companies and plan sponsors in the US.

Learning Outcomes:

(3b) Describe the major applicable laws and regulations and evaluate their impact.

(3d) Apply applicable standards of practice.

Sources:

ASOP 8: Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits (excluding Appendices)

ASOP 26: Compliance with Statutory and Regulatory Requirements for the Actuarial Certification of Small Employer Health Benefit Plans (excluding Appendices)

Ch. 27: Group Insurance Rate Filings and Certifications

Commentary on Question:

This question tested candidate knowledge of portions of the small group rate filing, as well as other applicable laws and regulations. The question gave a draft actuarial memorandum and had the candidates identify omitted sections, mistakes, propose revisions, and list ASOPs that govern small group rate filings. Candidate performance on the question was mixed. In general, candidates succeeded at noting many of the mistakes in the memorandum. When candidates noted a mistake, most candidates proposed a revision to address each mistake. Some candidates struggled with identifying the omitted sections of the actuarial memorandum.

Solution:

(a) Identify and describe sections omitted from the draft.

Commentary on Question:

This question tested candidate's knowledge of ASOP 8. Some candidates struggled with identifying the omitted sections of the actuarial memorandum. Many received partial credit by identifying assumptions or projection components to include.

- Assumptions:
  - Premium level and future rate changes
  - Projection of covered lives
  - Levels and trends in morbidity/mortality/lapsation
- Use of past experience to project future results. Adjust for:
  - Risk selection
  - Demo/risk characteristics of the insured population
  - Policy provisions (benefits, limits, cost-sharing)

4. Continued

(b)

(i) Identify material mistakes within the sections of the draft.

(ii) Propose revisions to address each mistake.

Commentary on Question:
This question tested a candidate's knowledge of applicable laws and regulations for small group rate filings. While most candidates were able to obtain partial credit, many candidates missed key mistakes or did not propose revisions to correct the mistakes.

Rating calculation section:

- Cannot adjust for group factors (group size, duration of coverage, industry)
  - Fix: Remove
- Cannot credibility adjust or include claims experience in the small group rate
  - Fix: Remove
- Cannot account for more than 3 child dependents in the family coverage rate
  - Fix: reduce to 3 or less

Regulatory benchmark section:

- The ACA's minimum MLR requirement is 80% of small group (memo lists requirement as 85%)
  - Fix: Adjust to 80%
- The index rate listed is a requirement for grandfathered plans
  - Fix: change the note to: the Index rate for non-grandfathered plans is shown in Part 1 URRT worksheet 1 and is the estimated expected average allowed claims for essential health benefits (EHBs) for the insurer's single risk pool. Allowed claims include both enrollee cost sharing and amounts paid by health plan.

Rating factors section:

- Plan design: incorrect actuarial values for metal tiers
  - Fix: adjust to match law (Platinum = 90%; Gold = 80%; Silver = 70%; Bronze = 60%)
- Cannot base factors on Company experience (age, geographic area)
  - Fix: adjust rates to be based on uniform rates set by state
- Tobacco use status is capped at 50% (memo lists the surcharge of 55%); must also provide smoking cessation, which allows covered person to offset, at least part of the surcharge
  - Fix: reduce to 50%; Add smoking cessation for reduction and note reduction

4. Continued

(c) List the ASOPs that govern small group rate filings.

Commentary on Question:
This question test candidate's knowledge of applicable ASOPs. Most candidates did well or got partial credit.

- ASOP 8: Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits
- ASOP 26: Compliance with Statutory and Regulatory Requirements for the Actuarial Certification of Small Employer Health Benefit Plans
- ASOP 23: Data Quality
- ASOP 41: Actuarial Communications

5. Learning Objectives:

3. The candidate will understand how to evaluate the impact of regulation and taxation on companies and plan sponsors in the US.

Learning Outcomes:

(3b) Describe the major applicable laws and regulations and evaluate their impact.

Sources:

GHVR-821-18: Employer Guide for Compliance with the Mental Health Parity and Addiction Equity Act, pp. 1-19

Commentary on Question:

This question was testing how well candidates understand Mental Health Parity regulations, and how specifically to apply MHPAEA rules to employer group benefits. Candidates needed to demonstrate that they fully understand the quantitative tests related to MHPAEA.

Solution:

(a)

(i) Identify the features of the proposed plan that may not be in compliance with the MHPAEA. Justify your answers.

(ii) Recommend changes to the proposed plan to bring the design into compliance with the MHPAEA.

Commentary on Question:

Generally, candidates performed well on part a, with most candidates receiving at least 75% of the available points. Many candidates did not point out the potential MHPAEA violation related to pregnancy having better cost-sharing than mental health, and many did not make the distinction between accident-related ER and MH/SUD.

(a)(i)

Inpatient benefit category:

May be out of compliance if pregnancy payments are more than 50% of costs because Pregnancy is richer than MH/SUD (Note: Pregnancy is 100% employer paid, 0% employee paid vs MH/SUD is 90% employer paid, 10% employee paid).

Outpatient Office Visit benefit category:

In Network is out of compliance since MH/SUD copay is $50 versus general copay of $25. Also, Out of Network is out of compliance because the lowered allowed visit limit (MH/SUD capped at 10 visits while general is capped at 20 visits).

5. Continued

Emergency care benefit category:
May not be in compliance - must test if accidents are more than 50% of costs. If accidents are more than 50% of costs, need to align cost sharing between accident and MH/SUD.

Pharmacy benefit category:
Brand MH/SUD is out of compliance, as the MH/SUD Brand copay is $50, which is higher than the General Brand copay of $25

(a)(ii)

Inpatient: Add $500 deductible, 80% coinsurance to pregnancy, making it less rich than MH/SUD. It would also be acceptable to apply the same deductible and coinsurance level across general, MH/SUD, and pregnancy.

Outpatient Office Visit benefit category:
Set out-of-network visit limit for MH/SUD to 20 to match General visit limit OR set MH/SUD office visit copay at $25 to match general.

Emergency care benefit category:
Eliminate distinction between accident-related visits and all other visits, and set all at $250 copay.

Pharmacy benefit category:
Change Brand MH/SUD copay to $25 to match General Brand copay

(b)

(i) List the tests that must be performed within each service category to determine appropriate benefits for MH/SUD according to MHPAEA.

(ii) Propose a coinsurance rate for inpatient in-network MH/SUD services for the plan that meets your company's goals, including compliance with the tests identified in part (i). Justify your response.

(iii) Propose a copayment amount for outpatient in-network MH/SUD services for the plan that meets your company's goals, including compliance with the tests identified in part (i). Justify your response.

5. Continued

Commentary on Question:
Well-prepared candidates were able to identify both financial tests and apply them to each of the scenarios in question. To receive full credit for parts (ii) and (iii), both tests needed to be performed correctly (and to the full extent necessary) with some calculations or results shown in the response, as well as a clear recommendation made. It was common for candidates to incorrectly include 100% coinsurance costs in the calculation in part (ii). Other recommendations may have received credit if appropriate.

(b)(i)
'Substantially All' test
'Predominant' test

(b)(ii)

First, perform the Substantially All Test:

Total Inpatient, In Network Payments: $150m
Payments subject to coinsurance*: $135m ($22.5m + $82.5m + $18m + $12m)
$135m/$150m = 90%.
90% are subject to coinsurance, which is greater than 2/3, so substantially all test is met.

*Note that 100% coinsurance is not a benefit subject to coinsurance, as the employee pays nothing. Therefore, these payments should be excluded from the calculation.

Next, perform the Predominant Test:

$135m Inpatient, In Network payments are subject to coinsurance
Of the payments subject to coinsurance:

Coinsurance Level	Projected Payments	% of costs
90% coins	$22,500,000	16.7%
80% coins	$82,500,000	61.1%
70% coins	$18,000,000	13.3%
60% coins	$12,000,000	8.9%
Total	$135,000,000	100.0%

Since 80% coinsurance makes up >50% of costs subject to coinsurance on its own, it is considered the predominant level. No cumulative testing is required.

Therefore, based on the above testing, 80% is minimum coinsurance rate allowed for MH/SUD Inpatient, In Network benefits. Given company's goal for lean benefits, 80% coinsurance should be the recommendation.

5. Continued

(b)(iii)

First, perform the Substantially All Test:

Total Outpatient, In Network Payments: $100m
Payments subject to a copay*: $80m ($30m + $20m + $20m + $10m)
$80m/$100m or 80% are subject to copays, which is greater than 2/3, so substantially all test is met.

*Note that 100% coinsurance is not a benefit subject to coinsurance, as the employee pays nothing. Therefore, these payments should be excluded from the calculation.

Next, perform the Predominant Test:

$80m Outpatient, In Network payments are subject to copay:

Copay Level	Projected Payments	% of costs	Cumulative %
$50 copay	$10,000,000	12.5%	12.5%
$40 copay	$20,000,000	25%	37.5%
$30 copay	$20,000,000	25%	62.5%
$20 copay	$30,000,000	37.5%	100.0%
Total	$80,000,000	100.0%	

Notice that, in the % of costs column, no single copay has more than 50% of costs. Therefore, we must perform the cumulative test, working from most restrictive copay to combine benefit levels and achieve >50% of costs.

Based on the above calculation, we need to combine the $50, $40, and $30 copay levels to achieve a cumulative % >50%. To satisfy to MHPAEA rules, recommend that a $30 copay should be used since it is the least restrictive copay that passes the testing. Note that $20 would also pass the test, but $30 is the leanest benefit that passes, which meets company goals.

6. Learning Objectives:

2. The candidate will understand how to prepare and be able to interpret insurance company financial statements in accordance with U.S. statutory principles and GAAP.

Learning Outcomes:

(2d) Apply applicable standards of practice.

Sources:

ASOP 28 3.11, SN 818,

Commentary on Question:

Straight forward memorization type question, most candidates missed some of the key details.

Solution:

(a) List and describe the four classifications of actuarial opinions.

Commentary on Question:

Missing details are common, e.g. unqualified opinion comes without caveat. Handful of candidates missed the 'documentation' component of the adverse opinion, as well as the fact that the qualified opinion is unnecessary if components are immaterial.

- Unqualified opinion
  - The actuary determines that the assets and liabilities are reasonable for the intended purpose
  - The actuary may provide an opinion without any limitations, reservations, or qualifications
- Qualified opinion
  - Results from a situation in which the actuary can determine that all liabilities, except for specifically defined components, make a good and sufficient provision
  - Unnecessary if these defined components are thought to be immaterial
- Adverse opinion
  - Arises when the actuary determines that the reserves and liabilities are not good and sufficient
  - The actuary should document the reasons for issuing an adverse or unfavorable opinion
- Inconclusive opinion
  - If the actuary cannot reach a conclusion due to deficiencies or limitations in the data, analyses, assumptions, or related information

6. Continued

(b) List and describe the five designated sections defined in the table of key indicators.

Commentary on Question:
More than a few listed the statements instead, but descriptions are missing details, especially as it pertains to the scope section. Some candidates listed the liabilities being opinion on PDR, UCL, etc. rather than the sections.

- Identification section
  - Identifies the appointed actuary
- Scope section
  - Asserts that the actuary has examined the assumptions and methods used in determining the actuarial liabilities and related items
  - Identifies the subjects on which an opinion is to be expressed
  - Describes the scope of the actuary's work.
- Reliance section
  - Identifies anyone that the appointed actuary relied upon for the underlying data records and/or summaries
- Opinion section
  - Expresses the appointed actuary's opinion with respect to the subjects identified in the scope section
- Relevant comments section
  - Allows the appointed actuary to comment or explain further any circumstances, concerns, or issues

(c)

(i) Write down the missing four classifications and five designated sections in the blank cells using your answers from parts (a) and (b).

(ii) Identify the type of opinion and wording you should issue by checking the appropriate boxes. Justify your answer.

Commentary on Question:
Candidates generally struggled with this question, but multiple answers were accepted based on the candidate's ability to defend their position. Many candidates felt they could not offer a qualified or unqualified opinion because of the lack of a reliance letter or otherwise said they did not have enough information, which received partial credit. The Excel file references a single example that earned full credit, but others may be accepted if appropriately justified.

Refer to the Excel file for a representative answer.

6. Continued

(d) Identify whether the following statements are true or false. Justify your answer.

(i) The Actuarial Memorandum must be filed with the statutory regulators at the same time as the Statement of Actuarial Opinion.

(ii) If the appointed actuary is replaced, the insurer shall within five business days notify the insurance department in the state of domicile.

(iii) If the appointed actuary is replaced, the insurer shall furnish the replacement actuary within ten business days with a separate letter indicating if there were any disagreements, resolved or unresolved, between the appointed actuary and company management for the preceding 24 months.

(iv) The Appointed Actuary must report to the Chief Financial Officer each year on the items within the scope of the Actuarial Opinion.

Commentary on Question:
Candidates need to justify their response to receive full credit. Many candidates correctly identified true/false but cited incorrect reasons as to why.

(i) False – actuarial memorandum is only provided to regulators upon request

(ii) True – the insurer must notify the insurance department within five business days if the appointed actuary is replaced

(iii) False – must furnish to the state, not the replacement actuary

(iv) False – report to the board of directors or audit committee, not the CFO

7. Learning Objectives:

2. The candidate will understand how to prepare and be able to interpret insurance company financial statements in accordance with U.S. statutory principles and GAAP.

Learning Outcomes:

(2a) Prepare financial statement entries in accordance with generally accepted accounting principles.

(2c) Project financial outcomes and recommend a strategy.

Sources:
GHVR-109-19

Commentary on Question:
Commentary listed underneath question component.

Solution:

(a) Identify the premium, assets, and liabilities for ABC as of December 31, 20X1 for each customer.

Commentary on Question:
This question asked the candidates to apply definitions of premium assets and liabilities in specific situations. Candidates generally did well on this section. Several candidates failed to achieve the full score because they failed to identify whether an item was an asset or liability. Several other candidates failed to understand that you can have an unearned premium liability even if the mode is monthly if the premium due date is not on the first of the month.

Customer 1 - Monthly premium of 5,000 is due and unpaid (asset) as of 12/31. Half of that premium (2,500) would be earned (revenue) with the remaining (2,500) unearned (liability)
Customer 2 – They paid a quarterly premium of 30,000 in Dec. as of 12/31, this is still prior to the due date, so this premium would be paid in advance (liability)
Customer 3 – As of 12/31/20X1, the annual premium of 240,000 was due and unpaid (asset). This premium was not paid until 12/10/20X2 the following year. 1/24 (20,000) (revenue) would be earned and the remaining 220,000 unearned (liability)

7. Continued

(b) Identify the types of benefit liabilities you need to estimate.

Commentary on Question:
This question was primarily a recall question but focused on a particular product, LTD. Candidate performance on this question was mixed. Several candidates got full or close to full credit. A number of other candidates received partial credit by mentioning the name of the liability without any additional details (e.g., IBNR, DLR, Accrued, Pending). A few candidates responded with a general discussion of benefit liabilities, including several items not specific to LTD and/or failing to identify how these general concepts were specifically described in the LTD context. Curiously, there were a number of candidates that relisted the premium assets and liabilities discussed in section a—this seems to be a result of anchoring on part (a) of the question and not fully reading the question.

The types of benefit liabilities needed to be estimated for an LTD plan are the follows:

- IBNR – for disabilities not yet reported to ABC
- Accrued payments – amount earned by continuing to be disabled past prior payment dates
- Unaccrued Payments – the Disability Life Reserve / open claims to be paid by taking the present value of benefits discounted for mortality and interest; usually calculated on a seriatim basis
- Pending Claims – liabilities that are dependent on approval of benefits, typically when claimant is still in the elimination period.

(c)

(i) Contrast quota share reinsurance and excess-of-loss reinsurance for LTD.

(ii) Describe the types of recoveries that ABC can anticipate with excess-of-loss reinsurance.

Commentary on Question:
This question asked the candidate to recall sections from the study note on reinsurance and apply to an LTD situation. The candidates did very well on part (i) but generally did not recall and apply the sections from the study note to specific LTD situations that could result in anticipated recoveries in part (ii). Several candidates failed to receive full credit on part (i) as they focused on claims components of both reinsurance arrangements.

7. Continued

(i)
With quota share reinsurance, the ceding insurer cedes a percentage of premiums collected to the reinsurer in exchange for the reinsurer to pay the same percentage of claims. The reinsurer pays the ceding insurer an expense allowance.

With excess of loss reinsurance, the ceding insurer pays the reinsurer a dollar amount per member per month in exchange for the reinsurer to pay a percentage (frequently 100%) of claims in excess of an attachment point. For disability, the attachment point is usually stated in terms of excess over a given monthly benefit.

(ii)
Three types of recoveries:

- Known recoveries where the insured is disabled and has a monthly benefit in excess of the attachment point and payments have been made
- Potential additional recoveries where the insured is disabled and has a monthly benefit in excess of the attachment point.
- Potential recoveries where the insured has a monthly benefit in excess of the attachment point but there is no reported disability.

8. Learning Objectives:

2. The candidate will understand how to prepare and be able to interpret insurance company financial statements in accordance with U.S. statutory principles and GAAP.

Learning Outcomes:

(2b) Interpret the results of both statutory and GAAP statements from the viewpoint of various stakeholders, including regulators, senior management, investors.

Sources:

Health Insurance Accounting Basics for Actuaries, Section 3– Advanced Topics in Health Insurance Accounting

Commentary on Question:

This question tests risk sharing mechanisms between the government and the insurers for Medicare Part D as well as the specifics of the Part D risk corridor program.

Solution:

(a) Describe how risk for Part D plans can be retained by the government.

Commentary on Question:

Most candidates were able to describe at least one answer.

- Reinsurance subsidy – After an individual's annual drug cost exceeds a catastrophic threshold, the government is responsible for 80% of the excess cost.
- Low-income cost sharing subsidy – Certain low-income individuals are exempt from having to pay cost-sharing.
- Coverage gap discount program – Insurers provide a discount on brand drugs for individuals in the "donut hole" or coverage gap. Insurers pay pharmacies for the full cost of the drugs as benefits are adjudicated, and later receive the discounts from manufacturers. The discounts really belong to the government.
- In all programs above, the government pays the insurer a flat monthly subsidy that is reconciled after claims for the policy year are complete
- Risk corridor program – to overcome insurer concerns about adverse selection, gain-sharing or loss-sharing payments are made to/from CMS if the difference between actual and expected claims costs exceeds certain thresholds

(b) List the differences between risk corridor provisions and rebate and remittance provisions.

8. Continued

Commentary on Question:
Candidates generally did well on this question, although there were some who confused rebate provisions with pharmacy rebates between insurers and drug manufacturers.

A risk corridor provision involves gain-sharing and loss-sharing with a governmental agency. A remittance provision only involves gain-sharing with a governmental agency, and not loss-sharing. A rebate provision only involves gain-sharing payments which are made to policyholders rather than to a governmental agency.

(c)

(i) Explain the Medicare Part D risk corridor program.

(ii) Write down the thresholds and risk sharing percentages under the program.

Commentary on Question:
Most candidates were able to comment on the gain/loss sharing relative to a target level of cost for (c)(i), but more details on the Medicare Part D risk corridor program was needed to get full credit. For part (c)(ii), a lot of candidates gave responses related to the ACA risk corridor program or Part D reinsurance subsidy, instead of the Part D risk corridor program.

(i) The Medicare Part D risk corridor program was established as part of the Medicare Modernization Act, to overcome insurers' concerns about adverse selection. It applies to both standalone Part D plans (PDPs) and integrated Medicare Advantage plans (MA-PDs). Each Part D plan has a target level of PMPM claims costs (Adjusted Allowable Risk Corridor Costs or AARCC) with different levels of gain-sharing or loss-sharing based on the difference between actual and target claims. In theory, the Part D risk corridor program could result in either net outflows by, or net inflows to, the government. In practice, aggregate gain-sharing payments from insurers to the government have consistently exceeded aggregate loss-sharing payments from the government to insurers.

(ii) Note that these thresholds apply to both above and below the target:

< 5% of target	0%
5% to 10% of target	50%
> 10% of target	80%

8. Continued

(d) The Adjusted Allowable Risk Corridor Cost is $75 per member per month (PMPM). Calculate the actual PMPM claims assuming:

(i) A loss sharing payment from CMS of $1.30 PMPM. Show your work.

(ii) A loss sharing payment to CMS of $5.96 PMPM. Show your work.

Commentary on Question:
Credit was given to candidates even if they did not use the correct thresholds and savings as long as it was consistent with their answer for (c)(ii). A lot of candidates missed the detail in (d)(ii) where the direction of the payment calculation is the opposite of (d)(i).

Calculate thresholds using AARCC of $75:

105% of AARCC	$78.75 ($3.75 over)
95% of AARCC	$71.25 ($3.75 under)
110% of AARCC	$82.50 ($7.50 over)
90% of AARCC	$67.50 ($7.50 under)

(i) A loss sharing payment from CMS means that actual claims PMPM is over the AARCC. Based on the payment, the actual claims PMPM falls between the 105% and 110% threshold.

Payment = (actual claims – 105% of AARCC) * 50%
=> $1.30 = (actual claims – $78.75) * 50%
=> actual claims = $81.35

(ii) A loss sharing payment to CMS means that the actual claims PMPM is under the AARCC. Based on the payment, the actual claims PMPM falls below the 90% threshold.

Payment = (90% of AARCC – 95% of AARCC) * 50% + (actual claims – 90% of AARCC) * 80%
=> -$5.96 = ($67.50 - $71.25) * 50% + (actual claims – $67.50) * 80%
=> actual claims = $62.39