CSP-GH Complete Illustrative Solutions
Fall 2011

1. Learning Objectives:

14. Demonstrate an understanding of the requirements regarding retiree life and health benefits.

Learning Outcomes:

(14a) Determine appropriate baseline assumptions for benefits and population.

(14b) Project future retiree benefit costs.

Sources:

Fundamentals or Retiree Group Benefits, Yamamoto, 2006 – Chapter 8

Commentary on Question:

The question was trying to discuss the role of the actuary when performing an actuarial valuation of post-retirement benefit under IASB rules.
In order to get the maximum points allowed on this question, candidates must have listed the major items of the model solution and have a discussion on each of them.
Most candidates discussed these items: making assumptions about future experiences, calculation of benefit expense components, and calculation of net liability (or assets).
Some candidate discussed these items: required footnote disclosure under IAS 19, allocation of benefits to years of employment, and calculation of settlements and curtailments.
Very few candidates discussed these items: calculation of other long-term employee benefits and calculation of termination benefits.

Solution:

Explain the role of the actuary under International Accounting Standards Board (IASB) rules pertaining to the actuarial and accounting valuation of post-retirement benefit.

Allocate benefits to years of employment

- Use straight line allocation

Determine assumptions for future experience used to value post-retirement benefits:

- Economic:
    - Trend
    - Salary increase
    - Benefit increases
    - Discount rate
    - Expected rate of return on assets

1. Continued

    - Duration of benefit payments
    - Must be consistent with each other
- Demographic
    - Mortality
    - Disability
    - Retirement age
- Should use company's best estimate

Determine the benefit expense and its components:

- Service cost
- Interest cost
- Expected return on asset
- Amortization of
    - Past service cost
    - Gain and loss

Calculation of the Expected Benefit Obligation (EBO) and the net liability

- Reconciliation of the funded status
- Reconciliation of the net liability

Consider any special events:

- Curtailments
- Settlements

Issue an actuarial report including all required footnote disclosure:

- Reconciliation of assets and liabilities of the plan to the net liability/asset on the employer's balance sheet
- Reconciliation of the net liability/asset movements during the period
- List assumptions here

Evaluate other long term employee benefits

- Treatment similar to post-employment benefits (with few exceptions)

Evaluate termination benefits

- Recognized completely once there is a commitment by the employer

2. Learning Objectives:

10. Evaluate the risks associated with health insurance.

Learning Outcomes:

(10a) Evaluate the risk associated with a specific product, including:

- Identify risks inherent in the product
- Describe the types of analysis used to measure the risk
- Discuss methods for mitigating the risks

Sources:

GH-C112-07: DFCA Handbook, Chapter 2

Commentary on Question:

In regards to preparing a study to assess the financial condition of an HMO, the question was trying to test the steps to develop a "Generalized Game Plan (Strategy)" and the "Major Practical Considerations."

In part (a) of the question, candidates did well in identifying the more detailed "Steps Required to Prepare the Analysis," however, candidates missed many of the major points such as Defining Objectives and Selecting Participants, Importance of the Business Plan, and Structuring the Report. In part (b), candidates often listed too many detailed examples instead of making a brief comment describing or expounding on the major considerations.

Solution:

(a) Describe the steps to initiate the study.

Defining objectives

Objectives should be consistent with and supportive of the company's overall objectives. The process needs a consensus of senior management.

Selecting participants in the study

All the participants should assume ownership of the project.

Examine existing business plan.

The project team will determine what extent to use in the study.

To identify and analyze alternative risk control measures.

The study should provide details about how to analyze risks and project financial results.

Structuring the report

The report should address implications and possible actions, determine the level of details, and identify all key participants.

2. Continued

(b) Describe the key practical considerations in planning and conducting the study.

Sensitivity testing of the business plan
- Select scenarios that test both internal and external control events

Identifying scenarios
- Scenarios based on risk structure of company

Quantifying existing demands on surplus
- Demands vary by scenario
- Can include
  - Pressure to grow profitably
  - Expansion of products

Dynamic interrelationship of assumptions
- Need to examine interdependence of assumptions
- For example:
  - Credited rates and persistency

Quantify impact of major off balance sheet items under alternative scenarios
- Off balance sheet item places company at risk without financial statement recognition
- Examples include:
  - Lease obligations
  - Derivative instruments

Selecting a methodology
- Depends on nature and materiality of risks involved
- Options include:
  - Simulations and cash flow testing
  - Gross premium valuation
    - Appropriate for: Uncertainty in future level of claims
  - Premium margin analysis

3. Learning Objectives:

4. Formulate and evaluate insurer claim reserving techniques.

6. Evaluate financial performance measures for insurers for both short-term and long-term products.

Learning Outcomes:

(4c) Calculate appropriate claim reserves given data.

(4d) Identify adjustments to IBNR (margins, trend, seasonality, claims processing changes, etc.)

(4e) Evaluate data resources and appropriateness for calculating reserves.

(6d) Compare measures for long-term and short-term products.

Sources:

Group Insurance, Bluhm Chapters 41, 42, 43, ASOP 5

Commentary on Question:

Commentary listed underneath question component.

Solution:

(a) Evaluate the present value of this benefit, including the Social Security offset.

Commentary on Question:

Important to this question is an understanding of periods to discount, survival function being cumulative and how to adjust for the social security offset.

This problem could be calculated several ways and still achieve the same answer. For example, you could calculate the offset as an adjustment to the annual benefit, and then apply discount and survivorship. Alternatively you could apply the discount and survivorship to the annual benefit and to the annual benefit adjusted for offset, and then apply the appropriate weight. The end result is the same. The final solution did depend on digits of rounding.

Annual Benefit B_t

	Annual Benefit	Social Security (SS)	80% SS	Adjusted Ann Benefit
Year1 Benefit	$24,000	$0	$0	$24,000
Year2 Benefit	$25,200	$0	$0	$25,200
Year3 Benefit	$26,460	$10,000	$8,000	$18,460
Year4 Benefit	$27,783	$10,000	$8,000	$19,783
Year5 Benefit	$29,172	$10,000	$8,000	$21,172

3. Continued

Survivorship C_t	Termination rate	Cumulative Survivorship
Year1 Benefit	0.200	0.800
Year2 Benefit	0.150	0.680
Year3 Benefit	0.100	0.612
Year4 Benefit	0.050	0.581
Year5 Benefit	0.030	0.564

Discount v^t	v=1/1.05 Years of discount	Factor
Year1 Benefit	1	0.952
Year2 Benefit	2	0.907
Year3 Benefit	3	0.864
Year4 Benefit	4	0.823
Year5 Benefit	5	0.784

Present Value = B_t x C_t x v^t

Year1 Benefit	18,278
Year2 Benefit	15,542
Year3 Benefit	9,761
Year4 Benefit	9,460
Year5 Benefit	9,362
Total	62,403

(b) Describe aspects of long term disability contracts that are important with respect to claims reserves.

Commentary on Question:
Key to completing this question was to recognize that this was specific to the CONTRACT and for CLAIM reserves. Many candidates discussed issues that were outside the question, such as waiver of premium. Candidates also failed to DESCRIBE. Many simply gave a list. A description requires further details than a single word.

Periodic Benefits
Long term benefits can be paid on cycles such as monthly.
The benefit received is usually a percentage of salary less offsets.

3. Continued

Long-Term Benefit Periods
Length of time a claimant receives benefits.
Benefits many times stop at age 65 or when a maximum amount is reached

Elimination period
After a claim occurs the claimant must wait a certain time until benefits are received.
Usually this is a few months with 90 days being common.

Optional Benefits
The contract can have benefits that are chosen by the individual policyholder. These can include cost of living adjustments or benefits that pay only partial amounts due to circumstances not meeting definition of fully disabled.

Integration of Benefits
Contract may require COB with other programs such as Social Security, Workman's comp or Medicare.

Limitations and Exclusions
Policy won't pay for items such as self inflicted injuries or may have limited pay periods for items such as mental or nervous conditions or other diagnosis.

(c) Describe considerations for estimating incurred claims for long term disability contracts found on Actuarial Standards of Practice #5 "Incurred Health and Disability Claims."

Commentary on Question:
Many candidates did not DESCRIBE, but rather listed the general areas from ASOP 5. Candidates should have expanded on the list to demonstrate knowledge of the general area.

Health Benefit Plan Provisions and Business Practices
Elements such as special group contract requirements, elimination periods, pre-existing conditions or maximum allowances that would affect costs.

Economic Influences
External environment items such as unemployment levels, consumer price indexes or changes in medical practices.

Organizational Claims Administration
These would be internal processes that would affect calculation of incurred claims. These would include such items as system changes, claims backlogs, governmental influences or complicated claims.

3. Continued

Risk Characteristics
The underlying change in risks accepted can be a factor. These changes could be due to Marketing or Underwriting of cases.

Legislative Requirements
Changes such as mandated benefits, underwriting requirements or reserve practices that are driven by changes in legislation.

Long-Term Considerations
Items that affect a policy over the long term would be such things as cost of living adjustments or social insurance integration.

4. Learning Objectives:

3. Evaluate techniques for claims and disease management.

Learning Outcomes:

(3a) Compare techniques used to manage claims utilization.

(3f) Estimate savings, utilization rate changes and return on investments.

Sources:

Duncan – Chapters 1-3

Commentary on Question:

This question is testing the understanding of types of care management programs and how to measure the ROI for a particular type.

Candidates generally did well when listing the care management programs. Very few were able to list all of them. Not many candidates were able to get full points on each care management program. Many candidates made the mistake using parts (i) through (iv) as categories and placed the care management programs into them with no details about each program. Most candidates missed Medical Home as a care management program. Many candidates responded with short/medium/long type answers for Timing of Service.

In part (b)(i), some candidates made the mistake of using the engagement rate when calculating the savings. In general, candidates did well on this part.

In part (b)(ii), many candidates only based their recommendation on the ROI with no further discussion . Full points were given to candidates who supplied a "yes" or "no" based on ROI and made other points to support their recommendation. The question specifically said to defend the answer.

Solution:

(a) Create a table that identifies care management programs with respect to:

Care Management Program	**Place of Service**	**Provider of Service**	**Timing of Service**	**Features of Service**
Pre-Authorization	MCO approves service	MCO provides, physician or hospital requests	Before the service ER admissions will sometimes require a retrospective authorization	Requires hospital or physician to obtain approval from a MCO before performing procedure
Concurrent Review	Acute hospital or nursing home	Hospitalist	During the hospital or nursing home stay	Monitor member's care while still receiving care Reduces average length of stay

4. Continued

Case Management	Typically begins during IP stay, continues when patient returns home	Case manager / nursing professional	Six months on average starting IP, continues at home	Health care professional coordinate care of patient with disease or illness
Demand Management	Often telephone	Clinical staff	Before surgery Triage before ER visit	Passive form Nurse advice lines Shared decision making
Disease Management	Telephonically	Trained nursing staff	Extended series of interactions	Big five chronic conditions Strong educational component Patients play active role
Specialty Case Management	Varies, uses concurrent, case management, and disease management approaches	Care manager Typically carved out to a vendor	Could be multiple stages of treatment Over extended period of time	Care manager with expertise in particular area Patients have difficult and expensive diseases
Population Health Management	Health Risk Assessments	Firms specializing in health management	Emphasis on preventive care Softer intervention that is voluntary	Broad set of medical conditions addressed Entire membership evaluated Emphasis on wellness, prevention, early detection
The Medical Home	Physician's office	Responsibility of management is physicians	Ongoing	Physician organizes testing, education and overall care coordination

(b)

(i) Calculate the Return on Investment (ROI) of this program.

Cost of Program	Cost PMPY x Member Months in Program /12	
	=1000/12*200	
	=16,666.67	
Savings due to Program	(PMPM of Other Members - PMPM of Contacted Members) x Member Months	
	=(255-240)*1000	
	=15,000.00	
ROI	Savings of Program / Cost of Program	
	=15000/16667	
	=0.90	

4. Continued

(ii) Recommend whether the program should be continued.

Recommendation to discontinue.
ROI < 1. Need to renegotiate fee to increase ROI or contract with more effective vendor. May need to keep program in order to remain competitive in the market place. Program has low engagement rate.

5. Learning Objectives:

3. Evaluate techniques for claims and disease management.

Learning Outcomes:

(3a) Compare techniques used to manage claims utilization.

(3d) Describe operational issues in the development of a study including acceptable methods for dealing with the issues.

(3k) Compare methodologies for calculating chronic and non-chronic trends.

Sources:

Society of Actuaries Health Spring Meeting June 2009 Session #23: Predictive Modeling Hybrids Gaining Increased Mileage

Fundamentals of Retiree Group Benefits, Dale Yamamoto, Chapter 9 Actuarial Methods and Assumptions

Commentary on Question:

Candidates understood leveraged trend very well, but generally did not understand leveraged variability. Candidates were able to retrieve some information on managing costs and apply some information to predictive modeling.

Solution:

(a) Identify the differences between leveraged trend and leveraged variability.

Definition of leveraged trend – the trend on a stop loss policy will be higher than general medical cost trend when the stop loss threshold stays constant.

Definition of a leveraged variability – the variability of plan costs in a stop loss policy will be higher than variability for the full claim amounts because high cost members are generally more volatile than members who have costs beneath the policy threshold.

(b) Identify the different ways that stop loss carriers deal with members they expect to exceed the stop loss threshold.

Spread the additional cost over the entire group
Employ care management programs
Obtain reinsurance for the group
Laser the high cost individuals

5. Continued

(c) Describe how you would customize and use your vendor's predictive model in order to price a stop loss contract.

Use the model to analyze high cost members
Identify specific conditions causing high claims
Add factors to the model such as geography
Do sensitivity testing or scenario testing

6. Learning Objectives:

3. Evaluate techniques for claims and disease management.

Learning Outcomes:

(3a) Compare techniques used to manage claims utilization.

(3d) Describe operational issues in the development of a study including acceptable methods for dealing with the issues.

(3e) Perform a literature review about program evaluation.

Sources:

Responsible Health Care Reform, Part 2: Access to Care

Commentary on Question:

Parts (a) and (b) were well answered by students. In addition, a number of students obtained a fair number of points if they thought about the general issues.
Part (c) was less well answered as students seemed unable to think of solutions.

Solution:

(a) Describe potential solutions to inadequate access to health care services in the United States.

Develop a new government-administered health infrastructure to widen social safety net.
Address inappropriate over-utilization to free up supply and increase access.
Encourage development of more retail clinics, urgent care facilities, after-hours physician office services and worksite wellness facilities.
Increase supply of primary care physicians.
Increase regulation of provider fees and associated disclosure.
Make greater use of allied health care professionals

- Expand use of physician assistants, pharmacist prescribing and complementary medicine practitioners.

(b) Describe potential solutions to inadequate access to insurance coverage in the United States.

Require that the individual market offer insurance to all applicants on a guaranteed issue basis with no pre-existing conditions.

- Need to avoid anti-selection or costs will escalate.

Mandate employers to provide health insurance.
Provide premium subsidies based on income.
Put restrictions on plan design.

- Simplified plan design might also result in lower admin costs.

6. Continued

Encourage high deductible health care plans.

- For individuals to take more responsibility and reduce costs.

Introduce a public plan that competes in the individual market.
Mandate provider fee schedules that apply to the private market.

- Major savings in admin costs.

Mandate minimum medical loss ratios.
Move entirely to government incurrence program.

- Expand Medicare and Medicaid.

(c) Describe the unintended consequences that may arise from legislators' efforts to address these access problems.

Extending coverage to a large number of people will increase the demand for medical services which may overwhelm the existing supply of providers.
Increase demand for services will put upward pressure on price.
Rating restrictions can result in subsidies from one group to another resulting in no real reduction overall.
Additional restrictions and requirements may result in insurer insolvency or non-participation in certain markets.
State budgets will be hit hard by Medicaid expansion leaving less dollars for other needed social services.
All proposals to date still leave a large number of uninsureds.

7. Learning Objectives:

2. Typical markets: Understands customer segments and how products are marketed to each.

Learning Outcomes:

(2a) Compare group vs. individual product vs. government financed markets.

Sources:

The Managed Health Care Handbook, Chapters 31 and 32

Commentary on Question:

Commentary listed underneath question component.

Solution:

(a) Describe the funding, purchasing habits, and distribution channels that different sized employer groups might use in the health insurance market.

Commentary on Question:

Candidates performed well on this question and a majority of the candidates were able to identify the employer group segment based on the number of lives covered. Group health plans are either fully insured or self-insured – smaller sized employer groups are fully insured and larger employer groups are typically self-insured. A considerable number of candidates indicated that employee paycheck contributions are used to fund the cost of coverage without specifying whether the group is self-insured or fully insured. Most candidates identified one or more purchasing habits in the model solution above and candidates were able to state the distribution channels through which group coverage is purchased. The funding, purchasing habits, and distribution channel differ by employer size in the health insurance market.

<u>Large Employer</u>
# of Lives Covered: 5,000+
Funding: Self funding is prevalent
Purchasing Habits: Focus on negotiating medical and administrative costs for short-term gains, use benefits staff, values network access is important, values reporting and data
Distribution Channel: Consultants

<u>Moderate Employer</u>
# of Lives Covered: 500 – 5,000 lives
Funding: Many are self funded
Purchasing Habits: Requires flexibility in plan design, sensitive to price, values network access and member service, demands data reporting
Distribution Channel: Consultants and brokers

7. Continued

Medium Employer
# of Lives Covered: 50 – 500 lives
Funding: Mostly fully insured but moving towards self insured
Purchasing Habits: Values network access and composition, sensitive to price, does not have benefits staff, and purchasing habits are variable
Distribution Channel: Mostly through brokers

Small Employer
# of Lives Covered: 2 – 50 lives
Funding: Fully insured
Purchasing Habits: Does not have benefits staff, purchasing decisions made based on price, the last group to get innovative products, pays higher premiums relative to benefits due to risk
Distribution Channel: Brokers and agents

(b) List other considerations for employer groups unrelated to size.

Commentary on Question:
The question asks the candidate to list the considerations for employer groups when they purchase group health insurance. This is a retrieval question and candidates are not expected to explain or provide additional comments to the considerations. The majority of candidates were able to identify a few considerations listed in the model solution above and a handful of candidates were able to identify all the consideration in the list above.

The following are considerations for employer groups when purchasing group health insurance:

- Cost and financial suitability
- Compatibility with human resource objectives
- Network access that is appropriate to the employee population
- The quality of care
- A choice among different plan designs
- A health plan that will provide excellent local service
- A strong health care partner

8. Learning Objectives:

14. Demonstrate an understanding of the requirements regarding retiree life and health benefits.

Learning Outcomes:

(14b) Project future retiree benefit costs.

Sources:

AAA Practice Note: Actuarial Equivalence for PD Plans and Medicare Advantage PD Plans under Medicare Drug Programs, March 2008

Commentary on Question:

Candidates did fairly well on part (a) but had more difficulties on part (d).

Solution:

(a) List the available ASOPs that can be used as valuable sources of guidance when performing the actuarial certification.

ASOP 23 – Data quality (accuracy of data, reliance, selection of data)
ASOP 41 – Actuarial communication
ASOP 8 – Actuarial filing and memo
ASOP 5 – Incurred health and disability claims
ASOP 25 – Credibility procedures

(b) Identify the data sources available in developing manual rates.

Company's own experience
Industry data
Medicare/Medicaid data
State rate filing
Hospital data
Consultant's data including SOA

(c) Define the factors that need to be considered for pricing.

Plan design
Risk of the population
Demography of the population
PBM program
Formulary
Rebate
Discount program
Medical cost trend

8. Continued

(d) Describe the components of documentation supporting the actuarial certification.

The actuarial valuation worksheet (i.e. BPTs) that are submitted to CMS.
Actuarial memorandum
- Method used
- Assumptions
- Scope
- Date used

Reliance of data and other information use to perform actuarial equivalent.
- Reliance letter should be documented

Data
- Source
- Selection
- Reviewed

Identify the actuary and the qualification
Actuary must state in the report that he or she a current member of the AAA and meets the qualifications for performing such a certification ==> Actuarial qualifications

9. Learning Objectives:

7. Integrate reinsurance arrangements with overall financial strategy of company plan/sponsor.

Learning Outcomes:

(7c) Assess the financial impact reinsurance has on the ceding company and reinsurance company in a given scenario.

Sources:

Handbook of Employee Benefits, Chapter 43 (Alternative Insured and Self-Funded Arrangements).

Commentary on Question:

Commentary listed underneath question component.

Solution:

(a) Describe what an Experience-Rating Arrangement is and explain how experience-rated premium would be calculated for medical insurance.

Commentary on Question:

Most candidates did not give a very complete description of the various elements of an Experience-Rating premium calculation.

Experience rating uses the actual experience of the insured group to rate the group. A group with favorable experience would result in premium that is lower than conventional premium and a group with unfavorable experience would result in higher than conventional premium.

The Calculation for an experience-rated premium would be the sum of the following elements:

- Trended Claims (Including the following elements)
  1. Expected paid claims - (credibility factor * group experience + (1 – credibility factor) * insurance company experience
  2. Pooling charge
  3. Utilization and Trend
- Underwriting Margin
- Administrative Costs
- Reserve Adjustment

(b) Calculate the 2011 Year-End Balance for the entire block of large groups using the 2011 financial projection assumptions.

9. Continued

Commentary on Question:
Candidates did well on part (b), but it was important that candidates were familiar with the case study and had a handle on the assumptions needed to project 2011 expenses, premium and claims. Many candidates overlooked putting Profit into the equation.

Year-End Balance = Beginning - Year Balance + Premium – Claims – Admin Cost
Year-End Balance = $0 + $36,843.4 - $30,307.4 – $3,809.3 = $2,726.1 Million

Admin Cost includes Premium Tax, Admin Expenses, Commissions, and Profit

Below are detailed Calculations (note that 2010 premium and claims along with 2011 assumptions come from the case study):

Beginning-Year Balance = 0 (this is first year of arrangement)
2011 premium = $33,494 million * 1.1 (10% increase) = $36,843.4 Million
2011 claims = $27,304 million * 1.11 (11% trend) = $30,307.4 Million
2011 Commission = $36,843.4 Million * 2% = $736.9 Million
2011 Premium Tax = $36,843.4 Million * 2% = $736.9 Million
2011 Admin Expense = $15 * membership (6,837) * 12 (months) = $1,230.7 Million
2011 Profit = 3% * $36,843.4 Million = $1,105.4 Million
2011 Admin Cost = $736.9 + $736.9 + $1,230.7 + $1,105.4 = $3,809.3 Million

(c) Compare and contrast a Deferred Premium Arrangement with an Annual Retrospective Premium Arrangement.

Commentary on Question:
In general, candidates did not understand these two arrangements very well. Most candidates did not master the material enough to be able to adequately describe them.

Deferred Premium Arrangements

- One to three months of premium are deferred by employer
- Deferred premium must be paid when contract terminates
- Employer can earn interest on this deferred premium which lowers administrative cost
- In essence, the amount deferred is equal to Incurred But Not Reported reserves

9. Continued

Terminal Retrospective Premium Arrangement

- Employer agrees to pay outstanding deficit that may exist at the time the contract is terminated
- Risk and Underwriting margin is substantially reduced because employer is taking on the risk
- The money saved in lower premium can be invested
- Employer will pay this deferred amount at year end if the plan's actual claims cost exceeds the actual paid premium
- If claims exceed premium paid, insurance company pays charges/claims out of capital or surplus accounts

10. Learning Objectives:

6. Evaluate financial performance measures for insurers for both short-term and long-term products.

Learning Outcomes:

(6a) Assess key financial measures used by various entities (insurers, HMOs, provider-owned plans).

(6b) Project financial outcomes and recommend strategy to management to achieve financial goals.

Sources:

Group Insurance – Chapters 37 and 43

Commentary on Question:

Overall, candidates performed very well on this question.

Solution:

(a) Calculate the forecasted 2011 Operating Margin for Great Expectations' Small Group business based on Charles Dickens' email of March 2, 2011.

Commentary on Question:

The calculations could be done on a PMPM basis, Annual PPL basis, or on the whole block basis. Any one of the calculations shown here would be correct. The most common mistake candidates made on this question was leaving premium tax out of the calculation.

			Membership for 2011	2,339,000
		Group Annual	**Annual PPM**	**PMPM**
Premium				
	2010	12,803,000,000	5,473.71	456.14
	Increase	15%	15%	15%
	2011	14,723,450,000	6,294.76	524.56
Claims				
	2010	12,035,000,000	5145.36	428.78
	Increase	13%	13%	13%
	2011	13,599,550,000	5,814.26	484.52
Commissions (5% of 2011 premiums)				
	2011	736,172,500	314.74	26.23
Premium Taxes (2% of 2011 premiums)				
	2011	294,469,000	125.90	10.49
Operating Expenses ($20 PMPM)				
		$20 x 12 x 2,339,000	$20 x 12	$20
	2011	561,360,000	240.00	20.00

10. Continued

Operating Income (2011 Premium - 2011 Claims - Commissions - Premium Taxes - Operating Expenses)	(468,101,500)	(200.13)	(16.68)
Operating Margin (Operating Income / 2011 Premium)	-3.2%	-3.2%	-3.2%

(b)

(i) Determine the impact on Great Expectations' operating margin if small group medical rates are reduced as proposed by Oliver Twist in his email of March 4, 2011.

Membership for 2010	2,339,000
Increase	15%
Membership for 2011	2,689,850

	Group Annual	**Annual PPM**	**PMPM**
Premium			
2010	12,803,000,000	5,473.71	456.14
Premium Increase	5%	5%	5%
Membership Increase	15%	N/A	N/A
2011	15,459,622,500	5,747.39	478.95
Claims			
2010	12,035,000,000	5145.36	428.78
Claim Trend	13%	13%	13%
Membership Increase	15%	N/A	N/A
2011	15,639,482,500	5,814.26	484.52
Commissions (5% of 2011 premiums)			
2011	772,981,125	287.37	23.95
Premium Taxes (2% of 2011 premiums)			
2011	309,192,450	114.95	9.58
Operating Expenses ($20 PMPM)			
	$20 x 12 x 2,339,000	$20 x 12	$20
2011	645,564,000	240.00	20.00
Operating Income (2011 Premium - 2011 Claims - Commissions - Premium Taxes - Operating Expenses)	(1,907,597,575)	(709.18)	(59.10)
Operating Margin (Operating Income / 2011 Premium)	-12.3%	-12.3%	-12.3%

Operating Margin decreases from -3.2% to -12.3%

10. Continued

(ii) Recommend whether the company should proceed with Oliver's proposal.

The company should not proceed with Oliver's proposal. The company's small business line will lose even more money. The main problem is that the claims continue to increase by 13%. The lower premiums in Oliver's proposal do not cover the increase in the claims.

(c) List three strategies and explain how each could mitigate the impact to operating margin.

Only three strategies are needed.

Reduce Operating Expenses

- Cut staffing levels where appropriate
- Evaluate overhead expenses to see if there are any savings opportunities
- Reduce travel expenses

Reduce Commissions

- Reduce commissions from flat 5% to flat 4% (or lower)
- Change commissions to PEPM so that overall commissions are less than current
- Change first year commissions to higher than 5%, then reduce renewal commissions so that overall commissions are less than current

Review/Implement Reinsurance Program

- Reinsurance could help reduce claim severity
- Reinsurance partner could help improve operating margins through improved underwriting and clam management

Reduce Claim Cost by Increasing Utilization Management

- Require prior authorization for over utilized benefits
- Manage the care of members

Reduce Claim Cost by Changing Benefit Designs

- Increase deductibles and out of pocket maximums
- Implement Consumer Directed Health Plans

Reduce Claim Cost by Changing How Providers are Reimbursed

- Payments based on Evidence Based Medicine
- Start pay for performance to ensure quality outcomes
- Re-evaluate provider contracts to see if any savings can be achieved

11. Learning Objectives:

2. Typical markets: Understands customer segments and how products are marketed to each.

8. Evaluate the impact of taxation on company/plan sponsor financial management.

Learning Outcomes:

Sources:
Group Insurance Chapter 1; Managed Care Handbook Chapter 48

Commentary on Question:
This question focused on the tax treatment of insurance carriers. Part (a) requested the candidates characterize the different sellers, which is a different task than listing the sellers. Many candidates neglected to add the describing characteristics of the different sellers. Part (b) asked candidates to show their work to calculate if the different companies were qualified as insurance companies. Full credit was given to candidates who looked at the share of revenues for each company which were driven by insurance products. Part (c) asked candidates to recall the treatment of IBNR between insurance companies and HMOs. Part (d) requested candidates to list the factors to determine whether a company is non-profit and to determine the qualification of GEIC as a tax-exempt charitable organization. Many candidates successfully identified the correct status but a smaller number of candidates also correctly added a short explanation of why they believed GEIC qualified.

Solution:
(a) Characterize the different sellers of group insurance products.

Insurance Companies – Characteristics:
- Offer a full range of group products
- Often have a national presence
- Can be either stock or mutual companies

Health Care Services Corporations – Characteristics:
- Not-for-profit entities
- Mainly Blues and Delta Dental

Health Maintenance Organizations – Characteristics:
- Maintain a network-driven model

Provider Owned Organizations – Characteristics:
- Provider groups with a hospital or hospital system

11. Continued

Self Insured Employers – Characteristics:

- Not subject to premium tax
- Not subject to mandated benefits

(b) For calendar year 2010:

(i) Determine if GEIC qualifies as an insurance company under Internal Revenue Service (IRS) regulations.

The IRS regulations define an insurance company as a company whose primary activity is issuing insurance contracts. The test is generally met if the company receives more than 50% of its revenues from issuing insurance contracts.

GEIC:
Premium Revenue = 51,474
Total Operating Revenue = 55,532
Percent of Revenue from Insurance Contracts: 51,474/55,532 = 92.7%

GEIC qualifies as an insurance company.

(ii) Determine if DSM qualifies as an insurance company under IRS regulations.

Dombey:
Premium Revenue = 6,355
Total Operating Revenue = 16,719
Percent of Revenue from Insurance Contracts: 6,355/16,719 = 38%

Dombey does not qualify as an insurance company.

(iii) Determine if the combined company would have qualified as an insurance company under IRS regulations.

Combined:
Premium Revenue = 57,829
Total Operating Revenue = 72,251
Percent of Revenue from Insurance Contracts: 57,829/72,251 = 80%

Combined company does qualify as an insurance company.

11. Continued

(c) Compare and contrast the treatment of accrued claim liabilities between insurance companies and HMOs which are not considered insurance companies.

Insurance companies can include in its unpaid losses a reasonable estimate of its incurred losses.

HMOs which are not insurance companies must meet all-events test.

- All of the events have occurred which determine the fact of the liability.
- Amount of liability has been estimated with reasonable accuracy.
- Economic performance occurs as the person performs the services.

(d)

(i) List factors in IRS Section 501c(3) which are relevant in determining whether a carrier qualifies as a tax-exempt charitable organization.

- Actually providing health care services and maintaining facilities and staff
- Offering services to non-members on a fee-for-service basis
- Providing care and reducing cost to indigent members
- Caring for persons on Medicare and Medicaid
- Making emergency room facilities available regardless of ability to pay
- Operating a meaningful subsidized membership program
- Offering health education programs that are open to the community
- Conducting health research programs
- Using surplus funds to improve facilities, equipment, and/or patient care

(ii) Assuming the potential acquisition with DSM did not happen, determine if GEIC would qualify as a tax-exempt charitable organization under Section 501c(3) as it was.

Great Expectations is publicly-traded, releasing its surplus to shareholders, therefore it is not tax-exempt.

12. Learning Objectives:

11. Complete a capital needs assessment.

Learning Outcomes:

(11a) Calculate capital needs for a given insurer.

(11d) Understand key elements of NAIC RBC model.

Sources:

Group Health Insurance, Chapter 19 Risk Based Capital Formulas

Commentary on Question:

Commentary listed underneath question component.

Solution:

(a) Describe each of the risk components used in the health risk based capital formula.

Commentary on Question:

Candidates were asked a retrieval cognitive question testing their general knowledge of the risk components of the RBC formula. Candidates performed very well simply listing the risks. If candidates missed points listing the risks, they tended to miss H_3 Credit risk. Candidates could have improved their scores by realizing this part of the question was worth 2 points and asked the candidates to *describe* the risks. Candidates could have scored many more points had they provided a brief description of each risk.

H_0 Asset Risk -- Affiliates

- Reflects risk that investment in stock of affiliate may lose value

H_1 Asset Risk -- Other

- Reflects risk that investments may default or lose value
- Certain asset factors doubled for top 10 holdings

H_2 Underwriting Risk

- Inadequate premium rates in future due to claim fluctuations
- Usually largest or most important risk for health insurers
- Exposure measure can be premium or claims
- Two components:
  1. Claims Experience Fluctuation Risk
     - Risk Charge = Incurred Claims x Risk Factor x Managed Care Adjustment
     - Managed Care Risk Adjustment Factor reflects predictability of claims

12. Continued

2. Other Underwriting Risk
   - Includes coverages not in the Claims Experience Fluctuation Risk

H_3 Credit Risk
- Reflects risk that amounts owed to the insurer will not ultimately be paid
- Higher risk for insurers with significant amount of capitated providers

H_4 Business Risk
- Misc risks not covered in other risks such as:
  - Risk of administrative expenses exceeding expectations
  - Risk of excessive growth will strain capital

(b) Calculate the overall change in H2 Underwriting Risk after the acquisition of CIC's Dental unit for only Bob's lines of business.

Commentary on Question:
Candidates were asked to show their understanding of the underwriting risk component of the RBC formula and how it could be applied to the company in the case study. Overall, candidates performed poorly. A significant number of points were available by listing the formulas, calculating the premiums, claims, and indicating the correct managed care risk adjustment factors by product. Many candidates did not take advantage of these points. Most candidates did not calculate the underwriting factor by splitting the premium by tier. Most candidates also failed to divide the risk charges by the premium to calculate the factors. Some candidates included ancillary products in the calculation which wasn't necessary for this question. Limited credit was given if the candidate calculated small and large group underwriting risks separately instead of combining them into a single comprehensive major medical value. Some credit was given if the candidate calculated the managed care adjustment factor for major medical and dental separately instead of combining them.

Calculate the H_2 Underwriting Risk before and after the acquisition.

1. Calculate H_2 Underwriting Risk before the acquisition.

   H_2 = Comprehensive Major Medical Risk + Dental Risk

   Medical Risk = Medical Claims x UW Risk Factor x Managed Care Risk Adj Factor
   Dental Risk = Dental Claims x UW Risk Factor x Managed Care Risk Adj Factor

12. Continued

Calculate Claims and Premium from Case Study (In Billions).

	Comprehensive Major Medical				
	Large Group	Small Group	Total		Dental
Premium	33.49	12.80	46.29		3.73
Claims	27.30	12.04	39.34		2.98

1.1 Calculate underwriting risk factor for Comprehensive Major Medical.

Combine Small and Large group into Comprehensive Major Medical.
Split premiums by tier and apply risk factors as provided in question.

	$0-3 B	$3-25 B	$25+ B	Total
Premium	3.00	22.00	21.29	46.29
UW Risk Factor	15.0%	15.0%	9.0%	
UW Risk Charge	0.45	3.30	1.92	**5.67**

UW Risk Factor = UW Risk Charge / Premium
= 5.67 / 46.29
= 12.2%

1.2 Calculate Managed Care Adjustment Factor.

Large Group Risk Factor = 0.85 as provided in question.
Small Group Managed Care Factor = 0.75 as provided in question.
Dental Managed Care Factor = 0.40 as provided in question.

	Large Group	Small Group	Dental	Total
Claims	27.30	12.04	2.98	42.32
Mgd Care Factor	0.85	0.75	0.40	
Mgd Care Risk	23.21	9.03	1.19	**33.43**

Managed Care Adj = Managed Care Risk / Claims
= 33.43 / 42.32
= 79.0%

1.3 Calculate Major Medical Risk.

Major Medical Risk = Claims x UW Risk Factor x Managed Care Adj
= 39.34 x 12.2% x 79.0%
= 3.80

12. Continued

1.4 Calculate underwriting risk factor for Dental.

Split premiums by tier and apply risk factors as provided in question.

	$0-3 B	$3-25 B	$25+ B	Total
Premium	3.0	0.73	0.0	3.73
UW Risk Factor	12.0%	7.6%	7.6%	
UW Risk Charge	0.36	0.06	0.0	**0.42**

UW Risk Factor = UW Risk Charge / Premium
= 0.42 / 3.73
= 11.1%

1.5 Calculate Dental Risk.

Dental Risk = Claims x UW Risk Factor x Managed Care Adj
= 2.98 x 11.1% x 79.0%
= 0.26

1.6 Calculate Underwriting Risk prior to acquisition.

H_2 = Medical Risk + Dental Risk
= 3.80 + 0.26
= 4.07

2. Calculate H_2 Underwriting Risk after the acquisition.

Calculate Claims and Premium from Case Study (In Billions)

Dental Premium = Dental 2010 + Dental 2008(acquisition)
= 3.73 + 3.42
= 7.15

Dental Claims = Dental 2010 + Dental 2008(acquisition)
= 2.98 + 2.81
= 5.79

Comprehensive Major Medical

	Large Group	Small Group	Total		Dental
Premium	33.49	12.80	46.29		7.15
Claims	27.30	12.04	39.34		5.79

12. Continued

2.1 Calculate underwriting risk factor for Comprehensive Major Medical.

Same as above
UW Risk Factor = 12.2%

2.2 Calculate Managed Care Adjustment Factor.

	Large Group	Small Group	Dental	Total
Claims	27.30	12.04	5.79	45.13
Mgd Care Factor	0.85	0.75	0.40	
Mgd Care Risk	23.21	9.03	2.32	**34.55**

Managed Care Adj = Managed Care Risk / Claims
= 34.55 / 45.13
= 76.6%

2.3 Calculate Major Medical Risk.

Major Medical Risk = Claims x UW Risk Factor x Managed Care Adj
= 39.34 x 12.2% x 76.6%
= 3.69

2.4 Calculate underwriting risk factor for Dental.

Split premiums by tier and apply risk factors as provided in question.

	$0-3 B	$3-25 B	$25+ B	Total
Premium	3.00	4.15	0.0	7.15
UW Risk Factor	12.0%	7.6%	7.6%	
UW Risk Charge	0.36	0.32	0.0	**0.68**

UW Risk Factor = UW Risk Charge / Premium
= 0.68 / 7.15
= 9.4%

2.5 Calculate Dental Risk.

Dental Risk = Claims x UW Risk Factor x Managed Care Adj
= 5.79 x 9.4% x 76.6%
= 0.42

12. Continued

2.6 Calculate Underwriting Risk after acquisition.

H_2 = Medical Risk + Dental Risk
= 3.69 + 0.42
= 4.11

3 Calculate overall Change in H2 Underwriting risk.

Change = H_2 after acquisition – H_2 prior to acquisition
= 4.11 – 4.07
= 0.04

13. Learning Objectives:

14. Demonstrate an understanding of the requirements regarding retiree life and health benefits.

Learning Outcomes:

(14b) Project future retiree benefit costs.

Sources:

Fundamentals or Retiree Group Benefits, Yamamoto, Chapter 8

Commentary on Question:

Commentary listed underneath question component.

Solution:

(a) Define the categories of employee benefit programs under IAS 19.

Commentary on Question:

Several candidates answered the question listing types of employer groups (e.g. single employer plans, multi-employer plans, agent plans) instead of employee benefit programs so candidates may have not thoroughly read the question.

1. Short-term employee benefits including salaries and paid leave/vacation days
2. Post-employment benefits including retirement benefits (e.g. pensions, 401(k)) and post-employment medical care
3. Termination benefits
4. Other long-term employee benefits including jubilee benefits, sabbatical leave, LTD

(b) Identify the accounting aspects of employee benefit programs under International Accounting Standards Board (IASB) rules.

Commentary on Question:

Several candidates left part (b) blank and very few candidates answered this question correctly.

1. Determine amount reflected in the current income statement
2. Determine amount recognized on the company balance sheet
3. Describe footnotes disclosures in the corporate financial reports

(c) Under IAS 19, calculate the net liability (or asset) of the plan as of December 31, 2011 assuming the Fair Value of Plan Assets is $3 million.

Commentary on Question:

Several candidates reversed signs and instead showed a $15 million liability. Several candidates did not show work and did not define the formula.

13. Continued

There were also several candidates that seemed to overcomplicate the formula (e.g. attempted to amortize the losses).

Funded status = Fair Value of Plan Assets – Defined benefit obligation
Funded status = $3,000,000 - $10,000,000 = -$7,000,000
= -$7,000,000

Net Asset (Liability) = Funded status + Unrecognized PSC + Unrecognized Loss
Net Asset (Liability) = -$7,000,000 + $2,000,000 + $6,000,000
= $1,000,000

(d) Under IAS 19, calculate the net liability (or asset) of the plan as of December 31, 2011 assuming the plan is completely unfunded.

Commentary on Question:
Several candidates reversed signs and instead showed $18 million liabilities.
Several candidates did not show work and did not define the formula.

Funded status = Fair Value of Plan Assets – Defined benefit obligation
Funded status = $0 - $10,000,000
= -$10,000,000

Net Asset (Liability) = Funded status + Unrecognized PSC + Unrecognized Loss
Net Asset (Liability) = -$10,000,000 + $2,000,000 + $6,000,000
= -$2,000,000

14. Learning Objectives:

5. Formulate and evaluate insurer reserving techniques for other liabilities.

Learning Outcomes:

(5b) Demonstrate adequacy of the reserve
- Gross premium valuation
- Asset adequacy analysis
- Recast analysis

Sources:

Asset Adequacy Practice Note: pgs.2-7, 10-14, 65-66

ASOP #7, pgs. 4-5

Commentary on Question:

Commentary underneath question component

Solution:

(a) Describe regulatory requirements which necessitate asset adequacy analysis.

Commentary on Question:

Many writers wrote answers that seemed to be pulling from a different section of the syllabus and/or did not understand the question. They wrote about when to do asset adequacy analysis rather than what regulations required performing it.

1. 2001 AOMR, provides that all companies must perform an asset adequacy analysis in forming the opinion
2. NAIC Codification, required disclosure of any material differences between the annual statement reserves and the reserves that would have been developed under an asset adequacy analysis
3. Regulation XXX, the company must perform asset adequacy analysis to take advantage of the XXX provisions
4. NY Regulation 127, pertains to asset adequacy testing for market value adjusted (or variable) annuities
5. Actuarial Guidelines 34 and 39, must perform asset adequacy analysis of the reserves supporting the contracts under 34, and 39 (VAGLB reserve)
6. 2001 CSO, permitted only if asset adequacy analysis is performed
7. State Insurance Department Requests, states can request an asset adequacy analysis depending on the condition of the company

(b) List the following:

(i) Published resources available for reference in your asset adequacy analysis.

14. Continued

Commentary on Question:
This was straightforward question. It is surprising how many people did not cite the SOA and/or AAA in their answer.

1. Society of Actuaries (list at least one of: Valuation Actuary Symposium, continuing education, newsletters, or other)
2. American Academy of Actuaries: ASOPs/Practice Notes
3. NAIC: list at least one of: model law adoption
4. State Regulatory Bodies

(ii) The key recipients of your asset adequacy analysis.

Commentary on Question:
Here many writers answered more than the two items necessary for full credit. Generally most candidates did well on this section of the question.

1. Regulators
2. Internal Company Management

(c) Describe various methods you may use to demonstrate asset adequacy.

Commentary on Question:
Most people got at least some of these correct. There were additional answers such as "scenario testing" which were common on many papers. There was also some confusion between this section and section (d) where they would put part of the answer in the wrong section.

1. Cash Flow Testing, Project the timing and amount of future cash flows under economic and other assumptions
2. Gross Premium Valuation, compare the present value of benefits to the present value of claims plus expenses
3. Extreme Conservatism, demonstrate that assumptions are very conservative
4. Risk Theory Techniques, used when liabilities are short-term in nature and supported by short-term assets
5. Loss Ratio Method: used for short-term health insurance business supported by short-term assets

14. Continued

(d) Describe situations when cash flow testing is not necessary according to Actuarial Standards of Practice (ASOP) guidance.

Commentary on Question:
There was some confusion between this section and section (c) where they would put part of the answer in the wrong section.

1. If the risks are short-term liabilities supported by short-term assets
2. If a block of business is insensitive to influences such as interest rates or changes in economic conditions
3. If the risk being evaluated is unanticipated sources of large claims, such as AIDS or asbestos

(e) Compare asset adequacy analysis with solvency testing.

Commentary on Question:
Most people did not do an adequate job in answering this part. They did a better job with asset adequacy than solvency testing, but struggled to explain the differences.

1. Asset Adequacy Analysis
    - Performed on the underlying assets, policies, or liability cash flows
    - Main purpose is to determine if assets are sufficient to cover liabilities
    - New business generally excluded
    - Performed separately for different lines of business
2. Solvency Test
    - Includes all assets and liabilities
    - Includes new business
    - Main purpose is to determine if the surplus is adequate to support the operations of the company
    - Wider scope than asset adequacy analysis

(f) Describe the guidelines you should follow and the actions you would take as a result.

Commentary on Question:
Almost no one referenced the NAIC instructions as the guiding regulation. Many people said that you should notify the recipients of the opinion, but only a few mentioned the Board of Directors specifically.

14. Continued

1. This situation is covered by the NAIC's Annual Statement instructions for Life and Accident and Health Insurers.
2. The actuary shall notify the Board of Directors that the opinion was in error.
3. The opinion is considered in error if it would not have been issued or would have materially been different than the issued opinion.

15. Learning Objectives:

9. Evaluate the impact of regulation on company/plan sponsor financial management.

Learning Outcomes:

(9a) Evaluate the interrelationship of state versus federal regulation on company financial management and marketing.

(9b) Compare the primary federal regulations with which an employer must comply when offering benefit plans.

Sources:

"Summary of New Health Reform Law" – *Kaiser Foundation*

Commentary on Question:

Question 15 focused on the impact of the health care reform on a small group employer, in relation to premium tax credit rules affecting the employer. Parts (d) and (e) demonstrate the students understanding of requirements for products to be listed on the health insurance exchanges.

Part (e) requested students to "describe" information, where most students relied on list retrieval rather than provide descriptions.

Most students knew the list associated with part (e), while few students knew the correct answer for part (d). Other comments follow each part of the solution listed below.

Solution:

(a) List the requirements under PPACA for small employers to receive tax credits for providing medical coverage to employees.

Commentary on Question:

Many students neglected to identify that the rules changed between 2013 and 2014.

Phase I - For tax years 2010 through 2013:

- Provide a tax credit of up to 35% for small employers
- With no more than 25 employees and average wages of less than $50,000
- Must purchase health insurance for employees with the tax credit
  - If the employer contributes at least 50% of a benchmark premium
  - Full credit will be available to employees with 10 or fewer employees and average annual wages of less than $25,000
  - Tax-exempt small businesses meeting these requirements are eligible for tax credits of up to 25%

15. Continued

Phase II - For tax years 2014 and later:

- For eligible small businesses that purchase coverage through the state Exchange
- Provide a tax credit of up to 50% of the employer's contribution toward the employee's health insurance premium
- Employer contributes at least 50% of the total premium cost
- Full credit will be available to employers with 10 or fewer employees and average annual wages of less than $25,000
- Tax-exempt small businesses meeting these requirements are eligible for tax credits of up to 35%

(b) Calculate the tax credits MM qualifies for under PPACA for each plan year.

Commentary on Question:

1. Most students correctly listed the ratio of employer to total contribution, but failed to explain why the ratio led to the conclusion that MM was eligible for full 35% or 50% tax credit.
2. Many students incorrectly answered the question as premium credits for individuals as opposed to the small business tax credit, calculating each premium as a percentage of total compensation. The personal premium credits are to be calculated as the percentage of personal health insurance premiums paid by the employee over personal salary, which has no bearing on the small business tax credits asked in part (c).
3. Full credit was given for using the non-tax exempt and tax exempt credit percentages.

MM Company has less than 10 employees and average salary less than $25,000 so is eligible for maximum tax credits.

For 2013, during Phase I:

- Employer pays $6,500/$8,000 = .8125 or 81.25% of cost > 50%, so is eligible for tax credit of 35%. (Tax exempt of 25%)
- Tax Credit for 2013 is 0.35 * $6,500 = $2,275

For 2014, during Phase II:

- Employer pays $7,500/$10,000 = .75 or 75% of cost > 50%, so is eligible for tax credit of 50%. (Tax exempt of 35%)
- Tax Credit for 2014 is .50 * $7,500 = $3,750

(c) Determine if the premiums by employee would be compliant under PPACA.

Commentary on Question:

1. Few students listed Premium Rating Area and Family Composition as allowed variations.
2. Many students neglected to show work details.

15. Continued

Premium Rate Compliance:

- Require guarantee issue and renewability and allows rating variation based only on:
  - Age (limited to 3 to 1 ratio)
  - Premium rating area
  - Family composition
  - Tobacco use (limited to 1.5 to 1 ratio)
- Employees X and W are the same age, except for tobacco use.
  - Premium Variation = \$1,600/\$1,200 = 1.333 < 1.5
  - Passes tobacco use variation rule.
- Employees Y and W are the same except for age.
  - Premium Variation = \$7,200/\$1,200 = 6 > 3
  - Fails age variation rule.
  - Premiums are not compliant under PPACA rules.

(d) List qualifications for plans to participate in health insurance exchanges.

Commentary on Question:
Very few students identified the required reporting information.

Requirements for health plans to participate on Health Plan Exchanges, they must:

- Meet marketing requirements
- Have adequate provider networks
- Contract with essential community providers
- Contract with navigators to conduct outreach and enrollment assistance
- Be accredited with respect to performance on quality measures
- Use a uniform enrollment form and a standard format to present plan information
- Report information on:
  - Claims payments policies
  - Enrollment
  - Disenrollment
  - Number of claims denied
  - Cost-sharing requirements
  - Out-of-network policies
  - State enrollee rights in plain language

(e) Describe the benefit tiers for individual and small group market products offered in health insurance exchanges.

Commentary on Question:
1. Many students neglected to list the requirement to "provide essential benefits."

15. Continued

2. Many students failed to point out the Catastrophic plan requirements relating to exemptions from mandates and the requirements to provide prevention benefits.
3. Most student answers contained a list, without any description asked for in the question.

Description of exchange health plans includes:

- Create four benefit categories of plans plus a separate catastrophic plan
- Bronze plans represents minimum credible coverage and:
  - Provide the essential health benefits
  - Cover 60% of the benefit costs of the plan
  - With out-of-pocket limits equal to the Health Savings Account (HSA) current law limit ($5,950 for individuals and $11,900 for families in 2010)
- Silver plans:
  - Provide the essential health benefits
  - Cover 70% of the benefit costs of the plan
  - With out-of-pocket limits equal to the Health Savings Account (HSA) current law limit
- Gold plans:
  - Provide the essential health benefits
  - Cover 80% of the benefit costs of the plan
  - With out-of-pocket limits equal to the Health Savings Account (HSA) current law limit
- Platinum plans:
  - Provide the essential health benefits
  - Cover 90% of the benefit costs of the plan
  - With out-of-pocket limits equal to the Health Savings Account (HSA) current law limit
- Catastrophic plan available to:
  - Those up to age 30 or to those who are exempt from the mandate to purchase coverage
  - Provides catastrophic coverage only with coverage levels set at the HSA current law levels and allows for prevention benefits and coverage for three primary care visits
  - Only available in the individual market

16. Learning Objectives:

9. Evaluate the impact of regulation on company/plan sponsor financial management.

10. Evaluate the risks associated with health insurance.

Learning Outcomes:

(9b) Compare the primary federal regulations with which an employer must comply when offering benefit plans.

(10a) Evaluate the risk associated with a specific product, including:

- Identify risks inherent in the product
- Describe the types of analysis used to measure the risk
- Discuss methods for mitigating the risks

Sources:

Kaiser Summary, Managed Care Chapter 46

Commentary on Question:

Commentary listed underneath question component.

Solution:

(a) Describe the significant provisions of the Patient Protection and Affordable Care Act (PPACA) as it relates to these Medicaid managed care plans.

Commentary on Question:

This part was testing the specific provisions of PPACA that affect Medicaid. Many candidates responded with general provisions of PPACA, instead of focusing on Medicaid, in particular Medicaid managed care plans. Most candidates got the 133% of FPL, but very little else. Some candidates talked about Medicare instead of Medicaid.

To receive full credit, candidates needed to understand that PPACA did more than just expand eligibility for Medicaid.

Expand Medicaid

- Increase Medicaid eligibility to 133% of FPL (Federal Poverty Level)
- Federal money will go to states to help pay for increased Medicaid benefits

Enhanced drug rebates are extended to Medicaid managed care plans

- 23.1% for brand drugs and 13% for multi-source drugs

Provides funding for CHIP

Increase Medicaid payments to PCPs for primary care

- To 100% of Medicare in 2013 and 2014

Annual fee on insurance plans

Additional fees/taxes on pharmaceutical manufacturers and medical devices

Coordination of members with eligibility for both Medicare and Medicaid

16. Continued

(b) List and define five of the common operational problems in managed care plans which would most affect the Medicaid managed care plan in the post reform environment.

Commentary on Question:
This part was testing the candidate's ability to prioritize and explain their answer rather than just regurgitating a list of operational problems.
Credit was given for at most five items, with significant credit given for the definitions/explanations.
Many candidates knew "the list" but did not explain how those items were applicable to Medicaid managed care plans. Candidates also often listed all the items they remembered, but no additional credit was given beyond 5.
The syllabus included over 10 items, but the model solution below includes only the most common 5 answers that candidates used, including the definition/explanation.

Undercapitalization – uncontrolled growth can also lead to undercapitalization

- Not having enough capital set aside to cover risk and costs

Unrealistic projections – post reform brings many changes and properly estimating enrollment in expanded Medicaid programs will be difficult

- Important to not overestimate growth

Uncontrolled growth – provider network becomes overloaded
Over extended management – new law and increase in business will press the knowledge and capacity of managers
Anti-selection – inability to underwrite and potential for anti-selective enrollment and plan provisions

17. Learning Objectives:

4. Formulate and evaluate insurer claim reserving techniques.

Learning Outcomes:

(4a) Describe the types of claim reserves (e.g., due and unpaid, ICOS, IBNR, LAE, PVANYD).

(4b) Explain the limitations and applications of the various valuation methods:

- Lag Methods
- Tabular Methods
- Case Reserves
- Projection Methods
- Loss Ratio Methods

(4c) Calculate appropriate claim reserves given data.

Sources:

GH-C102-07 Health Reserves

Commentary on Question:

The main learning objectives of the question are to retrieve information from the study note and apply the steps to actual experience data to develop claim reserves.
Listing answers for parts (a), (b), (c), and (e) with some small description received full credit, in most cases. In the analysis sections ((d) and (f)), some credit was achieved for simply writing out the formulas. If the final answer is derived, full credit is given. There were a lot of basic math steps so any clear rounding errors were forgiven and full credit could still be earned.
Part (c) was a list that most candidates seemed to miss. They either spent a lot of time and space writing up the wrong list or wrote little at all.

Solution:

(a) List and briefly describe various types of claim liabilities and claim reserves held by NATE.

Commentary on Question:

Most candidates got at least half of this list, many got full credit.

Due and unpaid liabilities - reported, adjudicated and processed but not paid
In course of settlement
Incurred but not reported claims
Loss adjustment expenses
Resisted claims/ litigation reserves

17. Continued

Outstanding accounting feeds
Deferred Benefit Reserves - loss event incurred but not fully paid
Contract Reserves

(b) Describe considerations of data quality when establishing claim reserves.

Commentary on Question:
Most candidates received very little credit in this section. They either left it blank, or started listing unrelated lists. Some credit was given if there was any mention of data limitations or reasonableness.

Internal consistency of data
Sources of data
Material adjustments made and justification
Appropriateness for the purpose
Review of the data and any limitations and bias
Cost and utilization data that tie to ledger
Cost and availability of alternative data sources
Credibility of random sample
Documentation

(c)

(i) Describe various methods of estimating claim reserves.

(ii) Identify circumstances in which each method is appropriate.

Commentary on Question:
These two parts were typically answered together. Most candidates were able to list the majority of the methods that were given. Credit was given for briefly describing each or most. Credit was given for writing down at least one use for each method.

Projection method (or Formula method) - trended pmpm times exposures less paid
Development method (or Completion method) - use prior claim payment lags to predict future claims and ultimate incurred claims
Should be used when prior claim patterns are indicative of future, without major changes in claims processing, plan design mix or admin
Loss Ratio Method (or Claim cost method) - uses pricing loss ratio and claims paid to date
Used for new products with little credible experience
Case Reserves - used for long term products with long duration such as disability
Tabular Method
Emerging Techniques

17. Continued

(d) Compute the IBNR reserves for NATE using simple averaging of age-to-age factors.

Commentary on Question:
Most candidates did really well or really poorly in this question. Full credit was given even if there were minor rounding issues. Candidates who didn't do the math or got the math wrong entirely could earn partial credit and some formula credits. Many candidates used the inverse of the age-to-age factors as completion factors. Minimal credit was given in this case.

		CF		Incurred
Jan	1/1.007	0.9983361	2849/.9983	2853.75
Feb	.9983/1.0095	0.9889412	3403/.9889	3441.05
Mar	.9889/1.0517	0.9403561	2853/.9404	3033.96
Apr	.9404/1.1783	0.7980391	2961/.7980	3710.34
May	.7980/1.3333	0.5985293	2300/.5985	3842.75
June	.5985/2.4667	0.242647	1324/.2426	5456.49
			Total Incurred	22338.34
			Total Paid	15,690
			IBNR	6,648

(e) Explain reasons why smoothed development factors should be used.

Commentary on Question:
Most candidates were able to describe one or two reasons.

The factors may not be representative of future claim patterns.
There could be a large claims or "bumps" in that data that need to be smoothed.
Used to smooth out variations in monthly patterns or seasonality.

(f) Compute the March completion factor using the membership weighted smoothing technique.

Commentary on Question:
Most candidates did really well or really poorly in this question. Full credit was given even if there were minor rounding issues. Usually if a candidate did well on part (d), then they would also get (f) correct as well. Candidates who didn't do the math or got the math wrong entirely could earn partial credit and some formula credits. Many candidates used the inverse of the age-to-age factors as completion factors. Minimal credit was given in this case. Some candidates calculated the total IBNR and not March. Some credit was lost for that.

17. Continued

		%	Weight	Lag 4	Lag 5	Lag 6
January	.7^5	0.168	0.057			
February	.7^4	0.240	0.082			
March	.7^3	0.343	0.117			
April	.7^2	0.490	0.167			
May	0.7	0.700	0.238			
June	1	1.000	0.340			
				1.0585	1.0143	1.0024

March IBNR: CF

lag 6	1/1.0024	0.9975
lag 5	.9975/1.0143	0.9834
lag 4	.9834/1.0585	0.9289
March		
Total Incurred	2853/.9289	=3071
Total Paid		=2853
IBNR	3071 - 2853	=218

18. Learning Objectives:

13. Understand an actuarial appraisal.

Learning Outcomes:

(13b) Describe components of an actuarial appraisal.

(13c) Describe an approach for preparing an actuarial appraisal.

Sources:

GH-C103-07: The Actuary and Health Insurance Mergers and Acquisitions

GH-C104-07: Mergers and Acquisitions, Toole and Herget Chapter 4, Valuation Techniques

Commentary on Question:

This question was testing the candidates understanding of the components that are used to calculate an actuarial appraisal. The candidate also is asked to calculate the appraisal and make a recommendation based on their results.

Solution:

(a)

(i) Perform an actuarial appraisal.

Commentary on Question:

Most candidates did really well on part (a). Some candidates did not consider income taxes and/or the acquisition cost. Candidates also applied the income tax to the change in capital, which is incorrect. Most candidates were able to provide a recommendation that with supporting details.

	Year 0	Year 1	Year 2
Reserves = 25% * Claims	7,000,000	8,312,500	8,200,000
Required Capital = 7.5% * Premium	2,200,000	2,887,500	3,216,000

	Year 1	Year 2
Premium	38,500,000	42,880,000
Investment Income	1,540,000	2,144,000
Claims	33,250,000	32,800,000
Commission Expense = 3% * Total Premium	1,155,000	1,286,400
Administrative Costs	2,000,000	-
Employee Compensation	3,000,000	1,850,000
Acquisition Cost	12,000,000	-
Change in Reserve = Current Year Reserve - Prior Year Reserve	1,312,500	(112,500)
Pre-Tax Profit = Premium + Invest Income - Claims - Change in Reserves – Expenses	(12,677,500)	9,200,100
After Tax Profit = Profit * (1 - Tax Rate)	(8,240,375)	5,980,065

18. Continued

Change in Required Capital = Current Year Capital - Prior Year Capital		687,500	328,500
Distributable Cash Flows = After Tax Profit - Change in Capital		(8,927,875)	5,651,565
CAPM Discount Rate Formula: Risk Free Rate + Beta * (Market Rate of Return - Risk Free Rate)	5%		
		Year 1	Year 2
Discounted Cash Flows = (Dist Cash Flows/ (1+ CAPM)^year)		(8,502,738)	5,126,136
Actuarial Appraisal Value (Sum of discounted cash flows)		**(3,376,602)**	

(ii) Recommend whether to pursue the acquisition of Big 12 Health Insurance Company.

No. I would recommend that Big 10 does not acquire big 12.
Based on the actuarial appraisal, the acquisition of big 12 would not be profitable over the time period shown.

(b) Describe different ways to validate the results of your appraisal.

Commentary on Question:
Most candidates did poorly in this section. The solution to this question was a specific set of methods for validating health insurance mergers and acquisitions.

Static validation is used to show that the starting values are consistent with actual values as of the valuation date.

Dynamic validation is used to show that the starting values are consistent with actual values as of the valuation date.

Sensitivity analysis is performed on key assumptions to communicate the potential range of risk.

19. Learning Objectives:

3. Evaluate techniques for claims and disease management.

Learning Outcomes:

(3e) Perform a literature review about program evaluation.

(3g) Describe value chain analysis as it applies to the planning and management of disease management and other intervention analysis.

Sources:

Session #14 PD

Commentary on Question:

Question was testing advantages of having insourced DM program rather having an outside vendor.
Candidates were asked to describe and not simply list.
Candidates only listed on average 4 to 5 advantages, when there were many more.
Some candidates unnecessarily defined disease management.

Solution:

Describe product and service features that an insurer with insourced Disease Management would likely claim as superior to those offered by an insurer who outsources Disease Management to a vendor.

- Outsourced model is call-centric and it is difficult to reach and engage member telephonically
- Outsourced DM models have been slow to re-engineer their products to meet employer demands for change
- Insourced solution offers better integration of chronic disease initiatives, non-duplication of CM UM DM wellness/lifestyle programs
- Outsourced vendors have high overheads that are already taken care of with insourced solutions
- Insourced solutions can take advantage of their close relationship to providers
- Non-duplicative predictive modeling and data warehousing - so less cost
- Treat whole person rather than each separate disease
- More resources directed towards higher savings activities
- Insourced model can more often reach member when it is more appropriate because they find out earlier or get admin inbound call
- Annoy members less/less harassment/same nurse/same company/less member confusion - thus more likely engaged
- Smooth handoffs and referrals to providers and programs
- Insourced can let member interactions be informed by benefit design
- Often outsourced vendor would not know about member situation until long past the event occurring and thus savings opportunity largely gone

19. Continued

- Can react when prior authorization request made so very early in the member event
- Increase in referrals and program enrollment
- More potential sources for identifying members than just claims
- Better client billing model (stable bills affecting ability to budget costs)
- Possible use of behavior therapy to reach people when they are at teachable moment or only focus on those who are open to it by using data on past encounters and successes
- Cheaper prices suggested by less overhead
- More nimble to meet performance guarantees because can move resources when needed or refocus as needed
- More credible savings because/if the insurer has applied the program to its fully insured population
- Less protected data handoffs; implies increased PHI security
- Member trust, known brand

20. Learning Objectives:

12. Prepare a Statement of actuarial Opinion (SAO) for selected health matters.

Learning Outcomes:

(12a) Describe the U.S. qualifications Standards and Statements of Actuarial Opinion (SAOs) as outlined in the Standard.

(12d) Discuss approaches to deal with obstacles to producing an unqualified SAO.

Sources:

Health Section News - Read. Think. Write.

Appendix A of the Practice Note of the Revised Actuarial Statement

Commentary on Question:

Students were generally able to list at least some of the items in part (a). Very few students provided additional detail beyond the statements listed in the solution below. Students generally performed less well on parts (b) and (c). It appears as if most students did not spend enough time on these parts and did not take into account that their recommendations might be dependent on additional information.

Solution:

(a) Describe the statements contained in the prescribed wording of the Opinion Section of the NAIC health annual statement.

The liabilities:

- Are in accordance with accepted actuarial standards
- Are based on appropriate actuarial assumptions
- Make good and sufficient provision
- Are consistent with the preceding year-end
- Include appropriate provisions for all items which ought to be established

(b) Explain how you would address this conservatism in your statement of actuarial opinion.

If LJI has a smaller block of business, a 30% margin may be okay due volatility in the block. If this was the case and I was comfortable with the margin, I would issue an unqualified opinion.

If I felt that the margin was too high I would first talk with management at LJI and try to get them to reduce the margin. If they would not, then I would have to issue a qualified opinion. One option would be to change the prescribed wording to state that the liabilities make sufficient provision rather than good and sufficient provision.

20. Continued

(c) Explain how you would have addressed the reserves in your statement of opinion if the reserve had only a small margin of 2%.

If LJI has a larger block of business, a 2% margin may be okay because the block may have little volatility. If this was the case and I was comfortable with the margin, I would issue an unqualified opinion.

If I felt that the margin was too low I would first talk with management at LJI and try to get them to increase the margin. If they would not, then I let them know that I may have to issue a qualified or adverse opinion. If they did not react to this statement, then I would issue the qualified statement.

21. Learning Objectives:

10. Evaluate the risks associated with health insurance.

Learning Outcomes:

(10b) Evaluate an enterprise risk management (ERM) system, including:

- Describe the components on an ERM program
- Describe ERM type risk
- Describe the types of analysis used to measure the risk
- Discuss methods for mitigating the risks

Sources:

Enterprise Risk Management: From Incentives to Controls: Chapter 4: What is Enterprise Risk Management, Chapter 9: Risk Analysis, Chapter 15: Business Applications

Commentary on Question:

The question was designed to test candidate's understanding of the ERM governance structure and application of the ERM. The question also tested candidate's ability to evaluate a business proposal and calculate the resulting value to shareholders.
Candidate performance/requirements for full marks:

- Most candidates correctly listed the function of the Chief Risk Officer.
- Few candidates talked about the role of other management or grouped their functions with the functions of the CRO. A separate list was required as part of the question.
- Part b of the question was either a hit or miss for candidates.
- Most candidates correctly responded to the calculation question.
- An explanation of both the shareholder value and shareholder value added was required for part (c) to get full marks. Merely describing the formula from the earlier part of the question in words was not sufficient.

Solution:

(a) Describe the responsibilities of a Chief Risk Officer (CRO) versus those of other members of senior management.

Chief Risk Officer:

- Provide overall leadership, vision an oversight of ERM
- Set risk management policies
- Establish integrated risk framework for the organization
- Allocate resources based on risk
- Communicate risk program/results to stakeholders
- Ensure there are systems and data available to create reports to monitor risk

21. Continued

Other Senior Management:

- Set risk appetite
- Ensure the company has needed risk management and risk absorption capabilities to meet needs
- Shape the risk culture
- Determine roles and structure
- Develop opportunities for education and learning around risk management

(b) Describe the major business applications of risk management.

- Loss reduction/minimize downside

Composed of:

- Credit risk management: to reduce pr of default and maximize recoveries
- Market risk practices: to minimize potential portfolio losses and liquidity crisis
- Operational risk controls: to reduce pr and severity of operational events

- Manage uncertainty

Focuses on managing volatility around business and financial results

Companies use:

- Credit scoring and migration models to more precisely estimate pr of default
- Sophisticated simulation models, notably VaR and economic capital techniques

- Performance optimization
  - Optimizing business performance by supporting and influencing pricing, resource allocation and other business decisions

(c) Given the above information:

(i) Calculate the Shareholder Value (SHV) and the Shareholder Value Added (SVA).

(ii) Explain what SHV and SVA measure.

Shareholder Value (SHV) = Economic Capital x (RAROC -g)/(Hurdle Rate - g)
RAROC = Risk Adj Return/Economic Capital
= 1000000/5000000
= 20%

21. Continued

Therefore, SHV = 5,000,000 x (20% - 8%)/(12% - 8%) = 15,000,000
Shareholder Value Added (SVA) = Shareholder Value - Economic Capital
= 1,5000,000-5,000,000=10,000,000

Shareholder value measure the overall present value of the future earnings on economic capital

Shareholder value added measures the degree to which shareholder value exceeds the value of the invested capital

22. Learning Objectives:

1. Analyze medical quality measures and their importance to companies, plan sponsors and members.

Learning Outcomes:

(1a) Describe impact of quality measures and how used by the stakeholders.

(1b) Identify performance indicators that would be considered meaningful in developing or evaluating the performance of a health plan.

Sources:

The Handbook of Employee Benefits, Measurement of Healthcare Quality and Efficiency Resources for Healthcare Professionals, Chapter 9

Health Plan Performance Measurements Reports GH-C100-07, Appendix

Commentary on Question:

Candidates generally fared quite poorly on the final (2-point) part of the question. Very little evaluation and defense was provided, particularly with respect to measurement against the benchmarks provided. Few candidates explored why the program may have been successful at only one of the two hospitals, or made recommendations regarding further analysis or next steps for the program.

Performance on the first three parts was better, although many candidates left a number of points behind on the calculation by insufficiently showing their work.

Solution:

(a) Explain the importance of measuring quality and efficiency.

Commentary on Question:

Adding details regarding the manner in which each item impacts the member, employer, or bottom line generates more points than a simple list, particularly given that the question asked the candidate to "explain."

1. Substantial evidence of overuse and underuse of services. Overuse leads to higher costs. Underuse leads to poorer health.
2. There are a number of medical errors. These raise costs and have a negative impact on health.
3. Poor quality of care erodes the value of healthcare purchases.
4. Failure to exercise due diligence in evaluating quality of care can lead to the plan being liable for damages in the case of poor outcomes.
5. Lack of attention to detail in quality of care can have negative consequences on relationships with members, providers, and others in the community.

22. Continued

6. Data measuring quality has a number of practical uses, including:
   a. Provider screening
   b. Fraud and abuse control
   c. Public reporting
   d. Purchaser decision making
   e. Professional standards

(b) List the considerations in assessing hospital quality.

Commentary on Question:
Significantly more points were earned by the candidate who demonstrated a grasp of the quality indicator in question.

1. Appropriate accreditations – state, CMS, JCAHO
2. Results of the JCAHO on-site survey
3. For special/specific procedures ask the hospital directly about the volume of admissions, the complication and mortality rates, and the success rates
4. AHA information – hospital facilities, services and personnel
5. Government data sources on hospital performance
6. Whether it's a major teaching hospital – these have lower mortality for certain procedures
7. Results of hospital satisfaction surveys
8. Hospital quality ratings by, for instance, healthgrades.com or the Leapfrog Group

(c) Calculate the change in ALOS produced by the program. Show your work.

Commentary on Question:
The question specifically indicates to "show your work." Simply stating the result earns far fewer points than actually writing out the equations.
Many candidates calculated ALOS only for each hospital individually, or only for the combination of the two facilities. More points could be earned for calculating results for each of the individual facilities as well as the total.

ABC 2008 ALOS = days/admits = 5350/1250 = 4.28 ALOS
XYZ 2008 ALOS = days/admits = 6500/1300 = 5.0
ABC 2009 ALOS = 5720/1300 = 4.4
XYZ 2009 ALOS = 4200/1200 = 3.5

We will combine the two hospitals since the case mix is the same.

2008 average = (5350 + 6500)/(1250 + 1300) = 4.647
2009 average = (5720 + 4200)/(1300 + 1200) = 3.968

22. Continued

(d) Evaluate whether the program was effective.

Commentary on Question:
This was a two-point question. While simply stating that "The program was effective because the ALOS decreased" earned a base number of grading points, the candidate who was able to assess results for each hospital and the program as a whole (including comparison to the "well-managed" and "loosely-managed" statistics), observe opportunities for further improvement, and provide analysis of why results may have differed between hospitals (or at least indicate that such an analysis should be undertaken) had an opportunity to earn significantly more points on this question. Candidates were asked to "evaluate" and "defend." This requires a deeper dive than a simple restatement of the basic facts.

Overall, the program looks effective. However, if you look at the results of the two hospitals separately, you will see a different story. The ALOS for Hospital ABC actually increased while the program was in place. The ALOS for Hospital XYZ dramatically decreased.

The case mix for the two hospitals is the same. The huge differences are a little puzzling, but could be due to staff at XYZ following the program better. It should be a priority to figure out the cause in differences.

ABC is still around loosely-managed levels while XYZ is actually below well-managed.
I still think that, overall, the program is effective, but more can be done to improve overall ALOS and ALOS at ABC specifically. It can learn more from what XYZ is doing to embrace the program.