

# Case Study

SPRING 2016 Group & Health Core–CANADA Exam

EXAM GHCORC

**GHCORC** Morning

# **Table of Contents**

| Case Study – Group & Health, Core Canada                              | 3  |
|---|----|
| Introduction  | 3  |
| Firm Description  | 3  |
| The Company's Clients   | 4  |
| Quantum Health Insurance Company (Quantum)                            | 4  |
| Individual and Small Group Major Medical Plans                        | 4  |
| Living Daylights Life and Health Insurance Company (Living Daylights) | 18 |
| Supplemental Medical Plans  | 18 |
| Your Eyes and Smiles Insurance Company (Your Eyes)                    | 22 |
| The Thunderball Corporation (Thunderball)                             | 24 |
| Long-Term Disability  | 24 |
| Long-Term Care  | 27 |
| Group Life  | 29 |
| Moonraker Energy (Moonraker)  | 30 |
| Dr. No's Herbal Tea (Dr. No's)  | 33 |
| Another Day, Inc. (Another Day)                                       | 35 |

# Case Study – Group & Health, Core Canada

#### Introduction

In this case study, you are the President at the Skyfall Actuarial Consulting firm (Skyfall or Firm). The case study will outline the characteristics of the Firm and provide details regarding the various current clients and prospective clients of Skyfall.

All numbers found in this case study are for illustrative purposes only and are not representative of true costs or actual relationships. Any similarities with actual company results are coincidental. Plan design and plan limitations for a given plan year may not be in compliance with current year guidance, regulations, or laws.

#### **Firm Description**

Skyfall is a medium-sized consulting firm that was founded in 1965 in London, Texas and provides actuarial services to life and health insurance companies, state and federal regulatory agencies, and employers. The Firm's staff consists of over 50 actuaries that are located in the United States.

Additionally, Skyfall has a location in London, Ontario, which provides actuarial services to clients, employers and insurance carriers in Canada. The Canadian office consists of over 25 actuaries that are located throughout Canada.

Skyfall employs roughly 50 actuarial students between the two locations. These students assist in daily tasks and client management. Skyfall is committed to the development and training of future actuaries, and this can be seen in the level of training and types of projects that actuarial students assist with.

The Firm's areas of expertise include:

- Individual and Small Group Major Medical Plans
- Large Group Major Medical Plans
- Medicare Advantage and Part D Plans
- Medicaid Plans
- Retiree Health Benefit Plans
- Group Disability Plans
- Individual and Small Group Dental Plans
- Large Group Dental Plans
- Group Life
- Group Long-Term Care
- Cafeteria Plans/ Flexible Benefits.

The corporate goal is to provide affordable and quality actuarial services to its clients to ensure that they have the tools to be successful in their business endeavors. Skyfall aims to build long-lasting client relationships and strives to provide excellent services for its clients. Due to its size, the Firm caters to individual client's unique needs and aims to exceed the client's expectations.

Below is a list of some of Skyfall's current and prospective clients:

# The Company's Clients

# **Quantum Health Insurance Company (Quantum)**

(Syllabus Reference: Learning Objective 2 – GHC-102-13, GHC-103-13, Learning Objective 6 – Group Ins Ch. 3 Appendix)

Quantum Health Insurance Company provides individual and small group coverage to its policyholders. Since its inception in 1975, Quantum has provided health care services to individuals and small groups and actively seeks to improve the overall health of its members.

Skyfall's services include the development and pricing of its products, regulatory compliance guidance, and valuation services.

#### **Individual and Small Group Major Medical Plans**

Quantum is actively participating in the Health Insurance Marketplace and SHOP Marketplace in most states in the US. Quantum offers all metal tier options: Bronze, Silver, Gold, and Platinum, as well as Catastrophic plans. The PPO plan offers out of network coverage. All of these plans are available to individuals and small groups. Similar products are also available off of the Exchanges and sold through brokers and agents.

Prior to the Affordable Care Act (ACA), Quantum offered major medical plans, such as HMOs, PPOs, and High Deductible Health Plans (HDHP). These plans are not ACA-compliant and are now classified as grandfathered plans. These grandfathered plans, originally marketed and sold to individuals and small groups, are no longer available for new business. The grandfathered plan block is called Quantum Legacy III.

Exhibit 1 shows a sample of the plan designs Quantum has in its portfolio of grandfathered plans and exchange plans. The first chart of Exhibit 1 shows the most sold grandfathered plan design for each year. The remainder of Exhibit 1 includes the product offerings available through the Health Insurance Marketplaces, SHOP Marketplaces, and off exchange. Key email correspondences between Quantum and Skyfall with detailed exhibits are also included.

| Exhibit 1 - Benefit Summary (Grandfathered Plans)                                 |  |   |   |  |  |
|---|--|---|---|--|--|
| Quantum Legacy III Individual and Small Group                                     |  |   |   |  |  |
| Benefit Category*   | 2012   | 2013  | 2014  |  |  |
| Deductible  | \$500 IN/ \$1,000 OON                              | \$1,000 IN/ \$2,000 OON                             | \$1,500 IN/ \$3,000 OON                           |  |  |
| General Coinsurance   | 10% IN/ 30% OON                                    | 20% IN/ 40% OON                                     | 20% IN/ 40% OON                                   |  |  |
| Maximum Out-of-Pocket   | \$2,200 IN/ \$4,400 OON                            | \$3,000 IN/ \$6,000 OON                             | \$3,500 IN/ \$7,000 OON                           |  |  |
| PCP   | \$25 IN/ Ded + Coins OON                           | \$30 IN/ Ded + Coins OON                            | \$30 IN/ Ded + Coins OON                          |  |  |
| Specialist  | \$50 IN/ Ded + Coins OON                           | \$60 IN/ Ded + Coins OON                            | \$60 IN/ Ded + Coins OON                          |  |  |
| Prescription Drugs<br>(Generic/Preferred Brand/Non-<br>Preferred Brand/Specialty) | \$5/\$40/\$60/\$100 IN/<br>All Tiers 30% Coins OON | \$10/\$50/\$75/\$150 IN/<br>All Tiers 40% Coins OON | \$10/\$50/\$75/20% IN/<br>All Tiers 40% Coins OON |  |  |

\*All other benefits are subject to Deductible and Coinsurance

\*\*IN = In-Network Benefits, OON = Out-of-Network Benefits

| Exhibit 1 (con't) - Benefit Summary (Exchange Plans)                              |                          |                              |   |  |  |  |
|---|--------------------------|------------------------------|---|--|--|--|
| Benefit Category  | Quantum HealthEdge       | <b>Quantum Health Direct</b> | Quantum Health Plus                           |  |  |  |
| Deductible  | \$6,000 IN/ \$12,000 OON | \$5,000 IN/ \$10,000 OON     | \$3,000 IN/ \$6,000 OON                       |  |  |  |
| General Coinsurance   | 0% IN/ 25% OON           | 20% IN/ 40% OON              | 20% IN/ 40% OON                               |  |  |  |
| Maximum Out-of-Pocket   | \$6,000 IN/ \$12,000 OON | \$6,250 IN/ \$12,700 OON     | \$6,450 IN/ \$12,700 OON                      |  |  |  |
| PCP   | Deductible + Coinsurance | Deductible + Coinsurance     | \$35 IN/ Ded + Coins OON                      |  |  |  |
| Specialist  | Deductible + Coinsurance | Deductible + Coinsurance     | \$55 IN/ Ded + Coins OON                      |  |  |  |
| Inpatient Services  | Deductible + Coinsurance | Deductible + Coinsurance     | Deductible + Coinsurance                      |  |  |  |
| Outpatient Facility   | Deductible + Coinsurance | Deductible + Coinsurance     | Deductible + Coinsurance                      |  |  |  |
| Outpatient Surgical   | Deductible + Coinsurance | Deductible + Coinsurance     | Deductible + Coinsurance                      |  |  |  |
| Emergency   | Deductible + Coinsurance | Deductible + Coinsurance     | Deductible + Coinsurance                      |  |  |  |
| Labs, X-Ray, Advanced Imaging   | Deductible + Coinsurance | Deductible + Coinsurance     | Deductible + Coinsurance                      |  |  |  |
| Prescription Drugs<br>(Generic/Preferred Brand/Non-<br>Preferred Brand/Specialty) | Deductible + Coinsurance | Deductible + Coinsurance     | \$10/\$50/\$100/\$150 IN<br>50% All Tiers OON |  |  |  |

| Exhibit 1 (con't) - Benefit Summary (Exchange Plans)                              |  |   |  |  |  |
|---|--|---|--|--|--|
|   |  | Quantum Health                                  |  |  |  |
| Benefit Category  | Quantum Health Premium                       | Complete  |  |  |  |
| Deductible  | \$1,500 IN/ \$3,000 OON                      | \$1,500 IN/ \$2,000 OON                         |  |  |  |
| General Coinsurance   | 20% IN/ 40% OON                              | 20% IN/ 40% OON                                 |  |  |  |
| Maximum Out-of-Pocket   | \$3,500 IN/ \$7,000 OON                      | \$1,500 IN/ \$6,000 OON                         |  |  |  |
| PCP   | \$10 IN/ Ded + Coins OON                     | \$15 IN/ Ded + Coins OON                        |  |  |  |
| Specialist  | \$60 IN/ Ded + Coins OON                     | \$35 IN/ Ded + Coins OON                        |  |  |  |
| Inpatient Services  | Deductible + Coinsurance                     | Deductible + Coinsurance                        |  |  |  |
| Outpatient Facility   | Deductible + Coinsurance                     | Deductible + Coinsurance                        |  |  |  |
| Outpatient Surgical   | Deductible + Coinsurance                     | Deductible + Coinsurance                        |  |  |  |
| Emergency   | Deductible + Coinsurance                     | Deductible + Coinsurance                        |  |  |  |
| Labs, X-Ray, Advanced Imaging   | Deductible + Coinsurance                     | Deductible + Coinsurance                        |  |  |  |
| Prescription Drugs<br>(Generic/Preferred Brand/Non-<br>Preferred Brand/Specialty) | \$10/\$35/\$75/\$150 IN<br>50% All Tiers OON | \$5/\$25/\$75/35% Coins IN<br>30% All Tiers OON |  |  |  |

\*\*IN = In-Network Benefits, OON = Out-of-Network Benefits

#### \*\*Quantum Email 1\*\*

| · ·      |   |
|----------|---|
| From:    | Dominic Greene < DGreene@quantum.com>       |
| To:      | You <jb007@skyfall.com></jb007@skyfall.com> |
| Sent:    | March 2nd, 2015                             |
| Subject: | Quantum Experience Exhibits                 |

As discussed in our call, here are several exhibits that we have updated recently for our legacy products (includes the plan designs seen in Exhibit 1 as well as others) and the new 2014 Exchange products for the individual market. As we are looking toward future pricing and reserving needs, we hope these exhibits will be helpful.

Additionally, there have been a lot of discussions about reinsurance. To help in calculating different scenarios, we are providing some continuance tables that should help as we explore all our options here.

Thank you, Dominic Greene President Quantum Health Insurance Company

Enclosures:

| Exhibit 2 - Quantum Health Individual Claims Continuance Probability Distribution |              |            |             |            |             |            |             |
|---|--------------|------------|-------------|------------|-------------|------------|-------------|
|   |              |            | 12          | 20         | )13         | 20         | )14         |
| Claims Dol  | lar Interval | Cumulative | Cumulative  | Cumulative | Cumulative  | Cumulative | Cumulative  |
|   |              | Frequency  | Annual Cost | Frequency  | Annual Cost | Frequency  | Annual Cost |
| \$0.00  | \$0.00       | 1.00       | \$4,300     | 1.00       | \$3,500     | 1.00       | \$3,700     |
| \$0.01  | \$2,500.00   | 0.91       | \$4,300     | 0.90       | \$3,500     | 0.93       | \$3,700     |
| \$2,500.01  | \$5,000.00   | 0.47       | \$4,000     | 0.42       | \$3,300     | 0.32       | \$3,500     |
| \$5,000.01  | \$7,500.00   | 0.30       | \$3,700     | 0.29       | \$3,100     | 0.23       | \$3,300     |
| \$7,500.01  | \$10,000.00  | 0.25       | \$3,500     | 0.23       | \$2,900     | 0.17       | \$2,900     |
| \$10,000.01   | \$15,000.00  | 0.19       | \$3,300     | 0.18       | \$2,800     | 0.14       | \$2,800     |
| \$15,000.01   | \$20,000.00  | 0.15       | \$3,000     | 0.14       | \$2,500     | 0.10       | \$2,500     |
| \$20,000.01   | \$30,000.00  | 0.10       | \$2,800     | 0.11       | \$2,300     | 0.09       | \$2,300     |
| \$30,000.01   | \$40,000.00  | 0.07       | \$2,300     | 0.07       | \$2,000     | 0.05       | \$1,800     |
| \$40,000.01   | \$50,000.00  | 0.04       | \$2,000     | 0.05       | \$1,800     | 0.04       | \$1,800     |
| \$50,000.01   | \$75,000.00  | 0.03       | \$1,900     | 0.04       | \$1,700     | 0.03       | \$1,500     |
| \$75,000.01   | \$100,000.00 | 0.02       | \$1,500     | 0.02       | \$1,300     | 0.02       | \$1,300     |
| \$100,000.01  | \$250,000.00 | 0.01       | \$1,200     | 0.01       | \$1,000     | 0.01       | \$1,000     |
| \$250,000.01+   |              | 0.00       | \$600       | 0.00       | \$500       | 0.00       | \$400       |

| Exhibit 3 - Individual Utilization and Cost per Service |                       |                 |                       |                 |                       |                 |  |
|---|-----------------------|-----------------|-----------------------|-----------------|-----------------------|-----------------|--|
|   | 20                    | 12              | 2013                  |                 | 2014                  |                 |  |
| Service<br>Category                                     | Utilization<br>/1,000 | Allowed<br>Cost | Utilization<br>/1,000 | Allowed<br>Cost | Utilization<br>/1,000 | Allowed<br>Cost |  |
| Inpatient   | 150                   | \$4,300.00      | 160                   | \$4,450.00      | 170                   | \$4,425.00      |  |
| Outpatient  | 900                   | \$1,320.00      | 966                   | \$1,360.00      | 1,015                 | \$1,380.00      |  |
| Physician   | 11,650                | \$85.00         | 12,014                | \$89.00         | 12,340                | \$90.00         |  |
| Rx  | 7,510                 | \$50.00         | 7,889                 | \$51.00         | 8,209                 | \$53.00         |  |

|                       |         | Exhibit 4  | - Monthly Expe   | erience              |                    |            |
|-----------------------|---------|------------|------------------|----------------------|--------------------|------------|
|                       |         | Quantum    | Legacy III - Inc | dividual             |                    |            |
| Calendar<br>Month     | Members | Premiums   | Paid Claims      | Completion<br>Factor | Incurred<br>Claims | Loss Ratio |
| 1-2012                | 7,896   | 2,308,948  | 2,727,060        | 1.0000               | 2,727,060          | 118.1%     |
| 2-2012                | 8,055   | 2,376,987  | 2,305,355        | 1.0000               | 2,305,355          | 97.0%      |
| 3-2012                | 8,077   | 2,377,052  | 2,013,934        | 1.0000               | 2,013,934          | 84.7%      |
| 4-2012                | 8,504   | 2,395,695  | 1,980,865        | 1.0000               | 1,980,865          | 82.7%      |
| 5-2012                | 8,516   | 2,402,690  | 2,644,293        | 1.0000               | 2,644,293          | 110.1%     |
| 6-2012                | 8,672   | 2,412,340  | 2,687,159        | 1.0000               | 2,687,159          | 111.4%     |
| 7-2012                | 8,881   | 2,416,038  | 1,425,978        | 1.0000               | 1,425,978          | 59.0%      |
| 8-2012                | 8,975   | 2,469,789  | 2,493,046        | 1.0000               | 2,493,046          | 100.9%     |
| 9-2012                | 9,323   | 2,562,306  | 2,452,640        | 1.0000               | 2,452,640          | 95.7%      |
| 10-2012               | 9,455   | 2,573,594  | 2,470,458        | 1.0000               | 2,470,458          | 96.0%      |
| 11-2012               | 9,700   | 2,698,180  | 2,129,643        | 1.0000               | 2,129,643          | 78.9%      |
| 12-2012               | 9,796   | 3,028,317  | 2,607,637        | 1.0000               | 2,607,637          | 86.1%      |
| 1-2013                | 9,833   | 3,127,177  | 2,957,608        | 1.0000               | 2,957,608          | 94.6%      |
| 2-2013                | 9,515   | 2,854,636  | 2,467,525        | 1.0000               | 2,467,525          | 86.4%      |
| 3-2013                | 9,473   | 2,839,725  | 2,798,587        | 1.0000               | 2,798,587          | 98.6%      |
| 4-2013                | 9,358   | 2,806,420  | 1,967,551        | 1.0000               | 1,967,551          | 70.1%      |
| 5-2013                | 9,123   | 2,692,078  | 1,902,958        | 1.0000               | 1,902,958          | 70.7%      |
| 6-2013                | 8,845   | 2,621,356  | 1,439,505        | 1.0000               | 1,439,505          | 54.9%      |
| 7-2013                | 8,741   | 2,611,980  | 1,841,738        | 1.0000               | 1,841,738          | 70.5%      |
| 8-2013                | 8,532   | 2,609,085  | 1,872,887        | 1.0000               | 1,872,887          | 71.8%      |
| 9-2013                | 8,530   | 2,595,166  | 2,297,758        | 1.0000               | 2,297,758          | 88.5%      |
| 10-2013               | 8,415   | 2,542,347  | 2,185,568        | 1.0000               | 2,185,568          | 86.0%      |
| 11-2013               | 8,114   | 2,513,110  | 2,435,339        | 1.0000               | 2,435,339          | 96.9%      |
| 12-2013               | 7,919   | 2,484,546  | 1,682,739        | 1.0000               | 1,682,739          | 67.7%      |
| 1-2014                | 4,926   | 1,724,350  | 1,887,666        | 0.9996               | 1,888,421          | 109.5%     |
| 2-2014                | 4,742   | 1,648,085  | 2,132,422        | 0.9995               | 2,133,433          | 129.4%     |
| 3-2014                | 4,719   | 1,617,855  | 1,628,138        | 0.9991               | 1,629,605          | 100.7%     |
| 4-2014                | 4,692   | 1,611,003  | 1,253,538        | 0.9987               | 1,255,126          | 77.9%      |
| 5-2014                | 4,633   | 1,609,329  | 1,488,594        | 0.9971               | 1,492,868          | 92.8%      |
| 6-2014                | 4,495   | 1,604,901  | 1,320,693        | 0.9935               | 1,329,293          | 82.8%      |
| 7-2014                | 4,484   | 1,582,986  | 1,165,960        | 0.9889               | 1,179,047          | 74.5%      |
| 8-2014                | 4,205   | 1,552,740  | 1,230,392        | 0.9873               | 1,246,276          | 80.3%      |
| 9-2014                | 4,179   | 1,493,549  | 1,398,453        | 0.9414               | 1,485,512          | 99.5%      |
| 10-2014               | 4,038   | 1,493,368  | 778,783          | 0.9330               | 834,669            | 55.9%      |
| 11-2014               | 3,968   | 1,434,833  | 639,486          | 0.8230               | 777,048            | 54.2%      |
| 12-2014               | 3,917   | 1,406,997  | 299,207          | 0.4477               | 668,363            | 47.5%      |
| 2012 Total            | 105,850 | 30,021,936 | 27,938,068       | 5.1177               | 27,938,068         | 93.1%      |
| 2012 Total 2013 Total | 106,398 | 32,297,626 | 25,849,763       |                      | 25,849,763         | 80.0%      |
| 2013 Total 2014 Total | 52,998  | 18,779,996 | 15,223,332       |                      | 15,919,661         | 84.8%      |
| Total                 | 265,246 | 81,099,558 | 69,011,163       |                      | 69,707,492         | 86.0%      |

|                   | Exhibit 4 (con't) - Monthly Experience |            |                 |                      |                    |            |
|-------------------|--|------------|-----------------|----------------------|--------------------|------------|
|                   |  | H          | MO - Individual |                      |                    |            |
| Calendar<br>Month | Members                                | Premiums   | Paid Claims     | Completion<br>Factor | Incurred<br>Claims | Loss Ratio |
| 1-2014            | 5,564                                  | 1,671,920  | 1,912,282       | 0.9998               | 1,912,619          | 114.4%     |
| 2-2014            | 5,540                                  | 1,622,609  | 2,234,596       | 0.9994               | 2,235,972          | 137.8%     |
| 3-2014            | 5,726                                  | 1,676,295  | 1,771,918       | 0.9992               | 1,773,304          | 105.8%     |
| 4-2014            | 5,927                                  | 1,683,622  | 1,420,286       | 0.9990               | 1,421,700          | 84.4%      |
| 5-2014            | 6,120                                  | 1,868,722  | 1,763,591       | 0.9987               | 1,765,844          | 94.5%      |
| 6-2014            | 6,100                                  | 1,843,985  | 1,607,467       | 0.9979               | 1,610,824          | 87.4%      |
| 7-2014            | 6,297                                  | 1,934,695  | 1,468,606       | 0.9940               | 1,477,412          | 76.4%      |
| 8-2014            | 6,365                                  | 1,940,690  | 1,670,386       | 0.9845               | 1,696,640          | 87.4%      |
| 9-2014            | 6,469                                  | 1,984,589  | 1,941,777       | 0.9649               | 2,012,484          | 101.4%     |
| 10-2014           | 6,505                                  | 1,984,241  | 1,125,292       | 0.9014               | 1,248,392          | 62.9%      |
| 11-2014           | 6,588                                  | 2,005,483  | 952,438         | 0.7332               | 1,298,948          | 64.8%      |
| 12-2014           | 6,854                                  | 2,419,834  | 469,606         | 0.4565               | 1,028,663          | 42.5%      |
| Total             | 74,055                                 | 22,636,685 | 18,338,245      |                      | 19,482,802         | 86.1%      |

|                   | Exhibit 4 (con't) - Monthly Experience |           |                 |                      |                    |            |
|-------------------|--|-----------|-----------------|----------------------|--------------------|------------|
|                   |  | Pl        | PO - Individual |                      |                    |            |
| Calendar<br>Month | Members                                | Premiums  | Paid Claims     | Completion<br>Factor | Incurred<br>Claims | Loss Ratio |
| 1-2014            | 1,595                                  | 474,771   | 547,680         | 0.9997               | 547,818            | 115.4%     |
| 2-2014            | 1,621                                  | 470,308   | 653,219         | 0.9997               | 653,394            | 138.9%     |
| 3-2014            | 1,645                                  | 477,046   | 508,569         | 0.9992               | 508,955            | 106.7%     |
| 4-2014            | 1,644                                  | 462,601   | 393,540         | 0.9991               | 393,892            | 85.1%      |
| 5-2014            | 1,678                                  | 507,551   | 483,081         | 0.9990               | 483,585            | 95.3%      |
| 6-2014            | 1,766                                  | 528,827   | 464,923         | 0.9988               | 465,463            | 88.0%      |
| 7-2014            | 1,794                                  | 546,004   | 417,998         | 0.9986               | 418,600            | 76.7%      |
| 8-2014            | 1,775                                  | 536,106   | 465,391         | 0.9978               | 466,422            | 87.0%      |
| 9-2014            | 1,877                                  | 570,417   | 562,881         | 0.9740               | 577,881            | 101.3%     |
| 10-2014           | 1,899                                  | 573,809   | 328,190         | 0.9474               | 346,402            | 60.4%      |
| 11-2014           | 1,878                                  | 566,312   | 271,230         | 0.8230               | 329,575            | 58.2%      |
| 12-2014           | 1,981                                  | 692,821   | 135,594         | 0.4886               | 277,501            | 40.1%      |
| Total             | 21,153                                 | 6,406,573 | 5,232,296       |                      | 5,469,488          | 85.4%      |

|                   | Exhibit 4 (con't) - Monthly Experience |                   |             |                    |            |  |
|-------------------|--|-------------------|-------------|--------------------|------------|--|
|                   | T                                      | otal - Individual | (HMO & PPO) | 1                  |            |  |
| Calendar<br>Month | Members                                | Premiums          | Paid Claims | Incurred<br>Claims | Loss Ratio |  |
| 1-2014            | 7,159                                  | 2,146,691         | 2,459,962   | 2,460,437          | 114.6%     |  |
| 2-2014            | 7,161                                  | 2,092,917         | 2,887,815   | 2,889,366          | 138.1%     |  |
| 3-2014            | 7,371                                  | 2,153,341         | 2,280,487   | 2,282,259          | 106.0%     |  |
| 4-2014            | 7,571                                  | 2,146,223         | 1,813,826   | 1,815,592          | 84.6%      |  |
| 5-2014            | 7,798                                  | 2,376,273         | 2,246,672   | 2,249,429          | 94.7%      |  |
| 6-2014            | 7,866                                  | 2,372,812         | 2,072,390   | 2,076,287          | 87.5%      |  |
| 7-2014            | 8,091                                  | 2,480,699         | 1,886,604   | 1,896,012          | 76.4%      |  |
| 8-2014            | 8,140                                  | 2,476,796         | 2,135,777   | 2,163,062          | 87.3%      |  |
| 9-2014            | 8,346                                  | 2,555,006         | 2,504,658   | 2,590,365          | 101.4%     |  |
| 10-2014           | 8,404                                  | 2,558,050         | 1,453,482   | 1,594,794          | 62.3%      |  |
| 11-2014           | 8,466                                  | 2,571,795         | 1,223,668   | 1,628,523          | 63.3%      |  |
| 12-2014           | 8,835                                  | 3,112,655         | 605,200     | 1,306,164          | 42.0%      |  |
| Total             | 95,208                                 | 29,043,258        | 23,570,541  | 24,952,290         | 85.9%      |  |

| **Quantum En | nail 2**  |
|--------------|---|
| From:        | Strawberry Fields <sfields@quantum.com></sfields@quantum.com> |
| To:          | You <jb007@skyfall.com></jb007@skyfall.com>                   |
| Sent:        | April 12th, 2015  |
| Subject:     | More Quantum Experience Exhibits                              |

Dominic requested that I send you similar experience exhibits for the small group market. I was not sure what all you needed. So, I have included a fair amount of details here for the small group market. If I missed something, please let me know.

Thanks!!!! S.F. Small Group Pricing - Actuarial Quantum Health Insurance Company

Enclosures:

|               | Exhibit 5 - Quantum Health Small Group Claims Continuance Probability Distribution |            |             |            |             |            |             |
|---------------|--|------------|-------------|------------|-------------|------------|-------------|
|               |  | 20         | 012         | 20         | 013         | 2014       |             |
| Claims Dolla  | ar Interval  | Cumulative | Cumulative  | Cumulative | Cumulative  | Cumulative | Cumulative  |
|               |  | Frequency  | Annual Cost | Frequency  | Annual Cost | Frequency  | Annual Cost |
| \$0.00        | \$0.00   | 1.00       | \$4,400     | 1.00       | \$4,700     | 1.00       | \$5,000     |
| \$0.01        | \$2,500.00   | 0.92       | \$4,400     | 0.88       | \$4,700     | 0.93       | \$5,000     |
| \$2,500.01    | \$5,000.00   | 0.46       | \$4,100     | 0.44       | \$4,400     | 0.33       | \$4,700     |
| \$5,000.01    | \$7,500.00   | 0.31       | \$3,800     | 0.29       | \$4,200     | 0.22       | \$4,500     |
| \$7,500.01    | \$10,000.00  | 0.25       | \$3,600     | 0.23       | \$3,900     | 0.17       | \$3,900     |
| \$10,000.01   | \$15,000.00  | 0.19       | \$3,400     | 0.19       | \$3,800     | 0.14       | \$3,800     |
| \$15,000.01   | \$20,000.00  | 0.17       | \$3,100     | 0.13       | \$3,400     | 0.10       | \$3,400     |
| \$20,000.01   | \$30,000.00  | 0.09       | \$2,900     | 0.11       | \$3,100     | 0.08       | \$3,100     |
| \$30,000.01   | \$40,000.00  | 0.08       | \$2,400     | 0.07       | \$2,700     | 0.03       | \$2,400     |
| \$40,000.01   | \$50,000.00  | 0.03       | \$2,000     | 0.04       | \$2,400     | 0.05       | \$2,400     |
| \$50,000.01   | \$75,000.00  | 0.04       | \$1,900     | 0.03       | \$2,300     | 0.02       | \$2,000     |
| \$75,000.01   | \$100,000.00   | 0.02       | \$1,500     | 0.04       | \$1,700     | 0.01       | \$1,800     |
| \$100,000.01  | \$250,000.00   | 0.01       | \$1,200     | 0.01       | \$1,300     | 0.00       | \$1,400     |
| \$250,000.01+ |  | 0.01       | \$600       | 0.00       | \$700       | 0.01       | \$500       |

|                     | Exhibit 6 - Small Group Utilization and Cost per Service |                 |                       |                 |                       |                 |  |  |
|---------------------|--|-----------------|-----------------------|-----------------|-----------------------|-----------------|--|--|
|                     | 2012   |                 | 20                    | 13              | 2014                  |                 |  |  |
| Service<br>Category | Utilization/<br>1,000                                    | Allowed<br>Cost | Utilization/<br>1,000 | Allowed<br>Cost | Utilization/<br>1,000 | Allowed<br>Cost |  |  |
| Inpatient           | 250  | \$3,590.00      | 263                   | \$3,560.00      | 281                   | \$3,550.00      |  |  |
| Outpatient          | 1,170  | \$1,380.00      | 1,250                 | \$1,410.00      | 1,325                 | \$1,435.00      |  |  |
| Physician           | 14,500   | \$85.00         | 14,950                | \$87.00         | 15,360                | \$88.00         |  |  |
| Rx                  | 9,530  | \$69.00         | 9,940                 | \$70.00         | 10,520                | \$71.00         |  |  |

|                          |         | Exhibit    | 7 - Monthly Exp   | erience              |                    |            |
|--------------------------|---------|------------|-------------------|----------------------|--------------------|------------|
|                          |         | Quantun    | ı Legacy III - Sm | all Group            |                    |            |
| Calendar<br>Month        | Members | Premiums   | Paid Claims       | Completion<br>Factor | Incurred<br>Claims | Loss Ratio |
| 1-2012                   | 5,107   | 1,483,448  | 1,106,163         | 1.0000               | 1,106,163          | 74.6%      |
| 2-2012                   | 5,178   | 1,508,919  | 1,516,147         | 1.0000               | 1,516,147          | 100.5%     |
| 3-2012                   | 5,838   | 1,710,264  | 1,872,736         | 1.0000               | 1,872,736          | 109.5%     |
| 4-2012                   | 5,798   | 1,714,651  | 1,137,072         | 1.0000               | 1,137,072          | 66.3%      |
| 5-2012                   | 5,981   | 1,783,034  | 1,242,488         | 1.0000               | 1,242,488          | 69.7%      |
| 6-2012                   | 6,031   | 1,805,447  | 1,175,904         | 1.0000               | 1,175,904          | 65.1%      |
| 7-2012                   | 5,999   | 1,815,089  | 1,244,004         | 1.0000               | 1,244,004          | 68.5%      |
| 8-2012                   | 6,169   | 1,870,761  | 1,268,556         | 1.0000               | 1,268,556          | 67.8%      |
| 9-2012                   | 6,051   | 1,847,254  | 1,214,498         | 1.0000               | 1,214,498          | 65.7%      |
| 10-2012                  | 6,043   | 1,857,291  | 1,419,278         | 1.0000               | 1,419,278          | 76.4%      |
| 11-2012                  | 5,976   | 1,848,841  | 1,562,616         | 1.0000               | 1,562,616          | 84.5%      |
| 12-2012                  | 5,896   | 1,831,581  | 1,603,904         | 1.0000               | 1,603,904          | 87.6%      |
| 1-2013                   | 5,913   | 1,834,676  | 1,982,137         | 1.0000               | 1,982,137          | 108.0%     |
| 2-2013                   | 5,935   | 1,847,569  | 1,829,711         | 1.0000               | 1,829,711          | 99.0%      |
| 3-2013                   | 5,659   | 1,826,889  | 1,225,415         | 1.0000               | 1,225,415          | 67.1%      |
| 4-2013                   | 5,566   | 1,792,647  | 1,335,881         | 1.0000               | 1,335,881          | 74.5%      |
| 5-2013                   | 5,358   | 1,732,352  | 1,529,595         | 1.0000               | 1,529,595          | 88.3%      |
| 6-2013                   | 5,323   | 1,726,199  | 1,307,705         | 1.0000               | 1,307,705          | 75.8%      |
| 7-2013                   | 5,392   | 1,752,999  | 1,662,432         | 1.0000               | 1,662,432          | 94.8%      |
| 8-2013                   | 5,163   | 1,692,462  | 1,244,213         | 1.0000               | 1,244,213          | 73.5%      |
| 9-2013                   | 5,000   | 1,650,000  | 1,457,773         | 1.0000               | 1,457,773          | 88.3%      |
| 10-2013                  | 4,934   | 1,639,458  | 1,269,054         | 1.0000               | 1,269,054          | 77.4%      |
| 11-2013                  | 4,851   | 1,620,707  | 1,142,181         | 1.0000               | 1,142,181          | 70.5%      |
| 12-2013                  | 4,813   | 1,617,934  | 1,564,836         | 1.0000               | 1,564,836          | 96.7%      |
| 1-2014                   | 4,627   | 1,156,267  | 701,916           | 0.9899               | 709,103            | 61.3%      |
| 2-2014                   | 4,538   | 1,168,461  | 1,129,082         | 0.9785               | 1,153,891          | 98.8%      |
| 3-2014                   | 4,532   | 1,178,689  | 1,192,843         | 0.9782               | 1,219,417          | 103.5%     |
| 4-2014                   | 4,523   | 1,180,709  | 870,662           | 0.9776               | 890,609            | 75.4%      |
| 5-2014                   | 4,485   | 1,194,370  | 967,374           | 0.9757               | 991,462            | 83.0%      |
| 6-2014                   | 4,482   | 1,202,050  | 1,111,231         | 0.9725               | 1,142,704          | 95.1%      |
| 7-2014                   | 4,422   | 1,232,984  | 948,439           | 0.9703               | 977,430            | 79.3%      |
| 8-2014                   | 4,378   | 1,277,086  | 1,267,239         | 0.9555               | 1,326,278          | 103.9%     |
| 9-2014                   | 4,348   | 1,257,562  | 996,838           | 0.9355               | 1,058,223          | 84.1%      |
| 10-2014                  | 4,231   | 1,262,044  | 1,165,980         | 0.9064               | 1,286,328          | 101.9%     |
| 11-2014                  | 3,884   | 1,202,044  | 1,018,315         | 0.8084               | 1,259,644          | 96.5%      |
| 11-2014                  | 3,830   | 1,330,917  | 934,110           | 0.6487               | 1,239,044          | 108.2%     |
| 2012 Total               | 70,064  | 21,076,580 | 16,363,366        | 0.0407               | 1,439,982          | 77.6%      |
| 2012 Total               | 63,904  | 20,733,892 | 17,550,933        |                      | 17,550,933         | 84.6%      |
| 2013 Total<br>2014 Total | 52,280  | 14,747,110 | 17,330,933        |                      | 17,350,933         | 91.2%      |
| Total                    | 186,248 | 56,557,582 | 46,218,328        |                      | 47,369,370         | 83.8%      |

|                   |         | Exhibit 7 ( | con't) - Monthly | Experience           |                    | Exhibit 7 (con't) - Monthly Experience |  |  |  |  |  |  |  |
|-------------------|---------|-------------|------------------|----------------------|--------------------|--|--|--|--|--|--|--|--|
|                   |         | H           | MO - Small Gro   | oup                  |                    |  |  |  |  |  |  |  |  |
| Calendar<br>Month | Members | Premiums    | Paid Claims      | Completion<br>Factor | Incurred<br>Claims | Loss Ratio                             |  |  |  |  |  |  |  |
| 1-2014            | 3,709   | 1,077,568   | 1,039,597        | 0.9999               | 1,039,701          | 96.5%                                  |  |  |  |  |  |  |  |
| 2-2014            | 3,693   | 1,076,273   | 727,058          | 0.9996               | 727,356            | 67.6%                                  |  |  |  |  |  |  |  |
| 3-2014            | 3,817   | 1,118,398   | 832,973          | 0.9995               | 833,351            | 74.5%                                  |  |  |  |  |  |  |  |
| 4-2014            | 3,951   | 1,168,634   | 1,025,474        | 0.9992               | 1,026,324          | 87.8%                                  |  |  |  |  |  |  |  |
| 5-2014            | 4,080   | 1,216,416   | 911,215          | 0.9989               | 912,189            | 75.0%                                  |  |  |  |  |  |  |  |
| 6-2014            | 4,067   | 1,217,503   | 706,565          | 0.9988               | 707,406            | 58.1%                                  |  |  |  |  |  |  |  |
| 7-2014            | 4,198   | 1,270,169   | 919,781          | 0.9918               | 927,410            | 73.0%                                  |  |  |  |  |  |  |  |
| 8-2014            | 4,243   | 1,286,799   | 854,655          | 0.9907               | 862,712            | 67.0%                                  |  |  |  |  |  |  |  |
| 9-2014            | 4,313   | 1,316,683   | 846,436          | 0.9529               | 888,239            | 67.5%                                  |  |  |  |  |  |  |  |
| 10-2014           | 4,337   | 1,332,857   | 928,350          | 0.9039               | 1,027,073          | 77.1%                                  |  |  |  |  |  |  |  |
| 11-2014           | 4,392   | 1,358,787   | 887,984          | 0.7199               | 1,233,459          | 90.8%                                  |  |  |  |  |  |  |  |
| 12-2014           | 4,569   | 1,419,454   | 754,652          | 0.6406               | 1,178,101          | 83.0%                                  |  |  |  |  |  |  |  |
| Total             | 49,370  | 14,859,541  | 10,434,740       |                      | 11,363,321         | 76.5%                                  |  |  |  |  |  |  |  |

|                   | Exhibit 7 (con't) - Monthly Experience |           |                 |                      |                    |            |  |  |
|-------------------|--|-----------|-----------------|----------------------|--------------------|------------|--|--|
|                   |  | I         | PPO - Small Gro | սթ                   |                    |            |  |  |
| Calendar<br>Month | Members                                | Premiums  | Paid Claims     | Completion<br>Factor | Incurred<br>Claims | Loss Ratio |  |  |
| 1-2014            | 1,814                                  | 543,068   | 406,707         | 1.0000               | 406,715            | 74.9%      |  |  |
| 2-2014            | 1,919                                  | 580,575   | 600,515         | 0.9999               | 600,567            | 103.4%     |  |  |
| 3-2014            | 1,921                                  | 582,599   | 335,372         | 0.9996               | 335,520            | 57.6%      |  |  |
| 4-2014            | 1,981                                  | 604,894   | 416,353         | 0.9991               | 416,739            | 68.9%      |  |  |
| 5-2014            | 2,071                                  | 636,580   | 399,564         | 0.9989               | 400,022            | 62.8%      |  |  |
| 6-2014            | 2,112                                  | 653,390   | 479,560         | 0.9983               | 480,400            | 73.5%      |  |  |
| 7-2014            | 2,174                                  | 675,224   | 380,988         | 0.9936               | 383,458            | 56.8%      |  |  |
| 8-2014            | 2,082                                  | 645,946   | 546,413         | 0.9884               | 552,819            | 85.6%      |  |  |
| 9-2014            | 2,140                                  | 666,265   | 456,201         | 0.9523               | 479,039            | 71.9%      |  |  |
| 10-2014           | 2,172                                  | 701,155   | 554,921         | 0.9035               | 614,218            | 87.6%      |  |  |
| 11-2014           | 2,134                                  | 687,468   | 504,728         | 0.7022               | 718,762            | 104.6%     |  |  |
| 12-2014           | 2,231                                  | 721,361   | 505,024         | 0.6509               | 775,905            | 107.6%     |  |  |
| Total             | 24,751                                 | 7,698,525 | 5,586,346       |                      | 6,164,164          | 80.1%      |  |  |

#### Society of Actuaries – Case Study, Group & Health, Core Canada

|                   | Exhibit 7 (con't) - Monthly Experience<br>Total - Small Group (HMO & PPO) |            |             |                    |            |  |  |
|-------------------|---|------------|-------------|--------------------|------------|--|--|
| Calendar<br>Month | Members   | Premiums   | Paid Claims | Incurred<br>Claims | Loss Ratio |  |  |
| 1-2014            | 5,523   | 1,620,636  | 1,446,304   | 1,446,416          | 89.2%      |  |  |
| 2-2014            | 5,612   | 1,656,848  | 1,327,573   | 1,327,923          | 80.1%      |  |  |
| 3-2014            | 5,739   | 1,700,997  | 1,168,345   | 1,168,871          | 68.7%      |  |  |
| 4-2014            | 5,933   | 1,773,528  | 1,441,827   | 1,443,063          | 81.4%      |  |  |
| 5-2014            | 6,151   | 1,852,996  | 1,310,779   | 1,312,211          | 70.8%      |  |  |
| 6-2014            | 6,179   | 1,870,893  | 1,186,125   | 1,187,806          | 63.5%      |  |  |
| 7-2014            | 6,372   | 1,945,393  | 1,300,769   | 1,310,868          | 67.4%      |  |  |
| 8-2014            | 6,325   | 1,932,745  | 1,401,068   | 1,415,531          | 73.2%      |  |  |
| 9-2014            | 6,453   | 1,982,948  | 1,302,637   | 1,367,278          | 69.0%      |  |  |
| 10-2014           | 6,509   | 2,034,012  | 1,483,271   | 1,641,291          | 80.7%      |  |  |
| 11-2014           | 6,526   | 2,046,255  | 1,392,712   | 1,952,221          | 95.4%      |  |  |
| 12-2014           | 6,800   | 2,140,815  | 1,259,676   | 1,954,006          | 91.3%      |  |  |
| Total             | 74,121  | 22,558,066 | 16,021,086  | 17,527,485         | 77.7%      |  |  |

#### \*\*Quantum Email 3\*\*

From:Dominic Greene <DGreene@quantum.com>To:You <JB007@Skyfall.com>Sent:April 20th, 2015Subject:Rx and Financial Statements

Here is some Rx data that is applicable to both individual and small group markets.

Also, we have finished our financial statements. I have enclosed them as well.

Dominic Enclosures:

| Exhibit 8 - Rx Information |                     |            |            |            |  |  |
|----------------------------|---------------------|------------|------------|------------|--|--|
|                            |                     | 2012       | 2013       | 2014       |  |  |
|                            | Generic             | \$45.00    | \$45.00    | \$45.00    |  |  |
| Average Wholesale          | Preferred Brand     | \$200.00   | \$200.00   | \$200.00   |  |  |
| Price                      | Non-Preferred Brand | \$235.00   | \$235.00   | \$235.00   |  |  |
|                            | Specialty           | \$2,585.00 | \$2,675.00 | \$2,700.00 |  |  |
|                            | Generic             | 70%        | 75%        | 75%        |  |  |
| Discounts                  | Preferred Brand     | 15%        | 20%        | 25%        |  |  |
| Discounts                  | Non-Preferred Brand | 10%        | 12%        | 15%        |  |  |
|                            | Specialty           | 8%         | 8%         | 10%        |  |  |
|                            | Generic             | \$1.50     | \$1.50     | \$2.00     |  |  |
| Dimension Franc            | Preferred Brand     | \$1.50     | \$1.50     | \$2.00     |  |  |
| Dispensing Fees            | Non-Preferred Brand | \$1.50     | \$1.50     | \$2.00     |  |  |
|                            | Specialty           | \$1.50     | \$1.50     | \$2.00     |  |  |

| Income Statement  |                |             |
|---|----------------|-------------|
|   | Years Ending I | December 31 |
| Revenue   | 2014           |             |
| Premiums  | 85,128         | 53,032      |
| Individual HMO  | 22,637         |             |
| Individual PPO  | 6,407          |             |
| Individual Grandfathered  | 18,780         | 32,298      |
| Total Individual  | 47,823         | 32,298      |
| Small Group HMO   | 14,860         |             |
| Small Group PPO   | 7,699          |             |
| Small Group Grandfathered   | 14,747         | 20,734      |
| Total Small Group   | 37,305         | 20,734      |
| Administrative fees Income  | 32             | 22          |
| Miscellaneous income  | 1,703          | 1,061       |
| Total operating revenue   | 86,863         | 54,114      |
| Net investment income   | 1,340          | 1,079       |
| Total Revenues  | \$ 88,203      | \$ 55,193   |
| Benefit expense   | 67,119         | 43,401      |
| Expenses  | 1              | 1           |
| Individual HMO  | 18,338         |             |
| Individual PPO  | 5,232          |             |
| Individual Grandfathered  | 15,223         | 25,85       |
| Total Individual  | 38,794         | 25,850      |
| Small Group HMO   | 10,435         | 23,030      |
| Small Group PPO   | 5,586          |             |
| Small Group Grandfathered   | 12,304         | 17,55       |
| Total Small Group   | 28,325         | 17,55       |
| Commissions   | 1,541          | 75          |
| General insurance expenses  | 9,534          | 5,780       |
| Insurance taxes, licenses, and fees, excluding federal income tax | 1,703          | 1,06        |
| Write-in  | 752            | 570         |
| Total expenses  | \$ 80,649      | \$ 51,57    |
| Income before income tax expense                                  | 7,554          | 3,61        |
| Income tax expense  | 2,568          | 1,23        |
|   |                |             |
| Net Income  | \$ 4,986       | \$ 2,388    |

| · · · · · · · · · · · · · · · · · · · | ed) - Financial Statements |                  |
|---------------------------------------|----------------------------|------------------|
|                                       | ance Sheet                 |                  |
| (In thousands)                        |                            | <b>.</b>         |
| Assets                                | December 31, 2014          | December 31, 201 |
| Current Assets                        |                            |                  |
| Cash and cash equivalents             | 11,931                     | 11,308           |
| Bonds                                 | 2,535                      | 2,695            |
| Real Estate                           | 2,835                      | 2,748            |
| Investment income due and accrued     | 201                        | 159              |
| Premium Receivables                   | 13                         | 1                |
| Other receivables                     | 995                        | 99:              |
| Other                                 | 1,712                      | 1,712            |
| Electronic data processing equipment  | 859                        | 859              |
| Total current assets                  | 21,081                     | 20,487           |
| Long-term investments                 | 17,505                     | 17,83            |
| Net property, plant, and equipment    | 906                        | 880              |
| Goodwill                              | 151                        | 163              |
| Other intangible assets               | 395                        | 390              |
| Other noncurrent assets               | 253                        | 245              |
| Total Assets                          | \$ 40,291                  | \$ 40,002        |
|                                       |                            |                  |
| Liabilities and Shareholder's Equity  |                            |                  |
| Liabilities                           |                            |                  |
| Current Liabilities:                  |                            |                  |
| Policy liabilities:                   |                            |                  |
| Accident and health contracts         | 9,535                      | 9,478            |
| Reserves for future policy benefits   | 59                         | 59               |
| Other policyholder liabilities        | 201                        | 202              |
| Total policy liabilities              | 9,795                      | 9,739            |
| Unearned Income                       | 82                         | 81               |
| Accounts payable and accrued expenses | 3,129                      | 3,299            |
| Current portion of long-term debt     | 67                         | 84               |
| Other current liabilities             | 1,594                      | 1,594            |
| Total current liabilities             | 14,667                     | 14,797           |
| Drafts outstanding                    | 533                        | 632              |
| Payable for securities                | 655                        | 938              |
| Remittances                           | 3,102                      | 2,98             |
| Other noncurrent liabilities          | 815                        | 2,98             |
| Total Liabilities                     | 19,772                     | 20,141           |
| Shareholder's Equity                  | 19,772                     | 20,141           |
| Shurehower's Equity                   |                            |                  |

\$

Common capital stock

Unassigned funds (surplus)

Total Shareholder's Equity

Total Liabilities and Owner's Equity

Retained earnings

6,500

12,951

40,002

410 **19,861** 

6,500 13,597

422

\$

20,519

40,291

# Living Daylights Life and Health Insurance Company (Living Daylights)

(Syllabus Reference: Learning Objective 1 - –Group Ins Ch. 7; Learning Objective 2 – Group Ins Ch. 33, 35, 38, Learning Objective 3 – Canadian Handbook of Flexible Benefits Ch. 14, 16 (although reference is Flexible Benefits, the topics refer generally to pricing), Learning Objective 4- Essentials of Managed Healthcare Ch. 25, Handbook of Canadian Pension and Benefit Plans Ch. 15, GHC-600-13, GHC-603-13, GHC-605-13, GHC-609-13, Learning Objective 5 – Group Ins Ch. 21, Ch. 45)

Living Daylights Life and Health Insurance Company has been a client for over 20 years. Living Daylights provides group coverage to its Canadian policyholders. Since its inception in 1975, Living Daylights has been providing services within Canada and actively seeks to provide a variety of plans to meet their policyholders needs while pooling the risk across an increasing number of members.

Skyfall Canada services include the pricing and development of its products, regulatory compliance guidance, and valuation services as the Appointed Actuary.

#### **Supplemental Medical Plans**

Living Daylights provides supplemental health benefits not covered by provincial medical plans to various companies within Canada. The summary of key benefit provisions provided by each of the plans is outlined in Exhibit 1 below:

|                    |                              | Exhibit 1 - Benefits         |                              |                            |
|--------------------|------------------------------|------------------------------|------------------------------|----------------------------|
|                    | Basic                        | Enhanced 1                   | Enhanced 2                   | Enhanced 3                 |
|                    |                              |                              |                              |                            |
| Prescription Drug  | 70%                          | 70%                          | 75%                          | 90%                        |
| Coverage           | (\$1,000 annual OOP max)*    | (\$1,000 annual OOP max)*    | (\$1,000 annual OOP max)*    | (\$1,000 annual OOP max)*  |
| Hospital Room      |                              |                              |                              |                            |
| Semi-Private       | Not covered                  | 100% (\$150/day max)         | 100% (\$150/day max)         | 100% (\$150/day max)       |
| Private            | Not covered                  | Not covered                  | 100% (\$200/day max)         | 100% (\$200/day max)       |
| Paramedical        | 80%                          | 90%                          | 90%                          | 100%                       |
| Coverage           | (\$200 per calendar year per | (\$500 per calendar year per | (\$500 per calendar year per | (\$1,000 per calendar year |
|                    | practitioner max)            | practitioner max)            | practitioner max)            | per practitioner max)      |
| Emergency Out of   | 60 travel days               | 180 travel days              | 180 travel days              | 180 travel days            |
| Country Coverage   | (\$1,000,000 annual max)     | (\$1,000,000 annual max)     | (\$1,000,000 annual max)     | (\$1,000,000 annual max)   |
| Vision             | Not covered                  | 100%                         | 100%                         | 100%                       |
| Coverage           |                              | (\$300 per 24 months max)    | (\$300 per 24 months max)    | (\$300 per 24 months max)  |
| Dental Coverage    |                              |                              |                              |                            |
| Preventive & Basic | 80%                          | 80%                          | 100%                         | 100%                       |
| Major              | Not covered                  | 50%                          | 50%                          | 50%                        |
| Orthodontic        | Not covered                  | Not covered                  | 50%                          | 50%                        |
|                    |                              |                              | (\$2,000 lifetime max)       | (\$3,500 lifetime max)     |

\* OOP max = Out-of-pocket maximum

Living Daylights has faced many challenges throughout the years but most challenging is the increased cost of prescription drugs and rising dental costs. There are currently no incentives in place for choosing generic over brand name drugs and there is currently no maximum annual or lifetime caps set for dental coverage, except for orthodontic coverage.

Exhibits 2a and 2b provide claims and trend data utilized in recent pricing work performed. The source data was prepared by the Living Daylights' research and development department.

| Society of Actuaries -      | Case Study. | Group & Health.  | Core Canada  |
|-----------------------------|-------------|------------------|--------------|
| <i>Sourcey of mermaires</i> | ense sunny, | 0. oup & 110 mm, | core commune |

| Exhibit 2a - Paid Claims Data for 2014 |              |              |               |              |  |  |  |
|--|--------------|--------------|---------------|--------------|--|--|--|
| \$ paid claims<br># of claims          | Basic        | Enhanced 1   | Enhanced 2    | Enhanced 3   |  |  |  |
| Prescription Drug                      | \$12,960,920 | \$73,203,561 | \$141,196,418 | \$76,938,806 |  |  |  |
| Coverage                               | 117,827      | 636,553      | 1,129,571     | 512,925      |  |  |  |
| Hospital Room                          | \$0          | \$1,002,789  | \$1,934,198   | \$1,053,956  |  |  |  |
|  | 0            | 8,022        | 12,089        | 5,547        |  |  |  |
| Paramedical                            | \$2,592,184  | \$16,044,616 | \$30,947,160  | \$16,863,300 |  |  |  |
| Coverage                               | 27,286       | 145,860      | 269,106       | 105,396      |  |  |  |
| Emergency Out of                       | \$648,046    | \$2,005,577  | \$3,868,395   | \$2,107,913  |  |  |  |
| Country Coverage                       | 22           | 67           | 129           | 70           |  |  |  |
| Vision                                 | \$0          | \$8,022,308  | \$15,473,580  | \$8,431,650  |  |  |  |
| Coverage                               | 0            | 32,089       | 61,894        | 33,727       |  |  |  |
| Dental Coverage                        | \$13,886,700 | \$95,918,900 | \$186,972,425 | \$74,948,000 |  |  |  |
|  | 34,717       | 159,865      | 233,716       | 88,174       |  |  |  |
| Covered Lives                          | 46,289       | 174,398      | 257,893       | 93,685       |  |  |  |

| Exhibit 2b - Annual Trend Data   |             |           |             |           |             |           |  |
|--|-------------|-----------|-------------|-----------|-------------|-----------|--|
|  | 2012-       | 2013      | 2013-       | 2014      | 2014-2015   |           |  |
| and the second sec | Utilization | Unit Cost | Utilization | Unit Cost | Utilization | Unit Cost |  |
| Prescription Drug<br>Coverage  | 5.0%        | 2.0%      | 4.1%        | 3.9%      | 1.2%        | 2.4%      |  |
| Hospital Room  | 6.7%        | 3.5%      | 6.3%        | -0.6%     | 3.5%        | 2.1%      |  |
| Paramedical<br>Coverage  | 5.1%        | 2.4%      | 4.2%        | 3.7%      | 4.0%        | 3.9%      |  |
| Emergency Out of<br>Country Coverage   | 3.1%        | 4.7%      | 2.7%        | 1.1%      | 1.6%        | 1.8%      |  |
| Vision<br>Coverage   | 3.2%        | 1.9%      | 2.9%        | 1.2%      | 3.0%        | 1.5%      |  |
| Dental Coverage  | 7.3%        | 3.0%      | 5.1%        | 1.5%      | 4.4%        | 1.5%      |  |

The trend factors reflect historical data, competitive information, provider contracts, and other trend drivers to determining the trend by category.

The Financial Statements for Living Daylights are seen in Exhibit 3.

|                  | Exhibit 3 - Financial Stat                 | tements |                                   |
|------------------|--|---------|-----------------------------------|
| Living Daylights |  |         | <b>Income Statement</b>           |
| (In thousands)   |  |         | For the Years Ending December 31, |
| Revenue          |  | 2014    | 2013                              |
|                  | Premiums                                   | \$7,660 | \$7,223                           |
|                  | Other revenue                              | 1,542   | 1,254                             |
|                  | Total operating revenue                    | 9,202   | 8,477                             |
|                  | Net investment income                      | 351     | 546                               |
|                  | Net realized gains (losses) on investments | 321     | 423                               |
|                  | Total Revenues                             | \$9,874 | \$9,446                           |
| Expenses         |  |         |                                   |
| _                | Benefit expense                            | \$5,193 | \$5,921                           |
|                  | Commissions                                | 1,149   | 1,083                             |
|                  | General and administrative expense         | 735     | 587                               |
|                  | Premium Taxes                              | 153     | 144                               |
|                  | Interest Expense                           | 50      | 45                                |
|                  | Amortization of other intangible assets    | 298     | 287                               |
|                  | Total Expenses                             | \$7,579 | \$8,068                           |
|                  | Income before income tax expense           | 2,295   | 1,378                             |
|                  | Income tax expense                         | 1,251   | 1,253                             |
| Net Income       |  | \$1,044 | \$125                             |

|  | Exhibit 3 - Financial Statements (continued)   |  |  |  |  |  |
|--|--|--|--|--|--|--|
| Living Daylights   |  | <b>Balance Sheet</b>   |  |  |  |  |
| (In thousands)   |  |  |  |  |  |  |
| Assets   | December 31, 2014  | December 31, 2013  |  |  |  |  |
| Current Assets   |  | /  |  |  |  |  |
| Cash and cash equivalents  | \$1,729  | \$2,210  |  |  |  |  |
| Investments available-for-sale, at fair value  |  |  |  |  |  |  |
| Fixed maturity securities (amortized cost)   | ) 9,564  | 8,456  |  |  |  |  |
| Equity securities  | 1,835  | 1,515  |  |  |  |  |
| Accrued investment income  | 159  | 149  |  |  |  |  |
| Premium Receivables  | 3,858  | 3,748  |  |  |  |  |
| Other receivables  | 995  | 897  |  |  |  |  |
| Other current assets   | 1,712  | 1,829  |  |  |  |  |
| Assets held for sale   | 859  | 901  |  |  |  |  |
| Total Current Assets   | \$20,711   | \$19,705   |  |  |  |  |
| Long-term investments  | \$2,102  | \$2,055  |  |  |  |  |
| Net property, plant, and equipment   | 1,811  | 1,729  |  |  |  |  |
| Goodwill   | 1,423  | 2,012  |  |  |  |  |
| Other intangible assets  | 5,005  | 3,025  |  |  |  |  |
| Other noncurrent assets  | 458  | 299  |  |  |  |  |
| Total Assets   | \$31,510   | \$28,825   |  |  |  |  |
| Liabilities  |  |  |  |  |  |  |
| Current Liabilities  |  |  |  |  |  |  |
| Policy Liabilities:  |  |  |  |  |  |  |
| Policy Liabilities:<br>Claims Payable  | \$1,232  |  |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits   | 2,082  | 2,180  |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i>  | 2,082<br>\$3,314   | 2,180<br>\$3,534   |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income   | 2,082<br>\$3,314<br>811  | 2,180<br>\$3,534<br>875  |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses  | 2,082<br>\$3,314<br>811<br>3,299   | 2,180<br>\$3,534<br>875<br>2,975   |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses<br>Short-term borrowings   | 2,082<br>\$3,314<br>811<br>3,299<br>856  | 2,180<br>\$3,534<br>875<br>2,975<br>701  |  |  |  |  |
| Policy Liabilities:Claims PayableReserves for future policy benefitsTotal Policy LiabilitiesUnearned IncomeAccounts payable and accrued expensesShort-term borrowingsOther current liabilities   | 2,082<br>\$3,314<br>811<br>3,299<br>856<br>1,594   | 2,180<br>\$3,534<br>875<br>2,975<br>701<br>1,647   |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses<br>Short-term borrowings<br>Other current liabilities<br><i>Total Current Liabilities</i>  | 2,082<br>\$3,314<br>811<br>3,299<br>856<br>1,594<br>\$9,874  | 2,180<br>\$3,534<br>875<br>2,975<br>701<br>1,647<br>\$9,732  |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses<br>Short-term borrowings<br>Other current liabilities<br><i>Total Current Liabilities</i><br>Long-term debt, less current portion  | 2,082<br>\$3,314<br>811<br>3,299<br>856<br>1,594<br>\$9,874<br>5,468   | 2,180<br>\$3,534<br>875<br>2,975<br>701<br>1,647<br>\$9,732<br>4,868   |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses<br>Short-term borrowings<br>Other current liabilities<br><i>Total Current Liabilities</i><br>Long-term debt, less current portion<br>Deferred tax liabilities, net   | 2,082<br>\$3,314<br>811<br>3,299<br>856<br>1,594<br>\$9,874<br>5,468<br>2,987  | 2,180<br>\$3,534<br>875<br>2,975<br>701<br>1,647<br>\$9,732<br>4,868<br>2,857  |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses<br>Short-term borrowings<br>Other current liabilities<br><i>Total Current Liabilities</i><br>Long-term debt, less current portion<br>Deferred tax liabilities, net<br>Other noncurrent liabilities   | 2,082<br>\$3,314<br>811<br>3,299<br>856<br>1,594<br>\$9,874<br>5,468<br>2,987<br>1,442                                 | 2,180<br>\$3,534<br>875<br>2,975<br>701<br>1,647<br>\$9,732<br>4,868<br>2,857<br>1,556                               |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses<br>Short-term borrowings<br>Other current liabilities<br><i>Total Current Liabilities</i><br>Long-term debt, less current portion<br>Deferred tax liabilities, net<br>Other noncurrent liabilities<br><b>Total Liabilities</b>   | 2,082<br>\$3,314<br>811<br>3,299<br>856<br>1,594<br>\$9,874<br>5,468<br>2,987  | 2,180<br>\$3,534<br>875<br>2,975<br>701<br>1,647<br>\$9,732<br>4,868<br>2,857  |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses<br>Short-term borrowings<br>Other current liabilities<br><i>Total Current Liabilities</i><br>Long-term debt, less current portion<br>Deferred tax liabilities, net<br>Other noncurrent liabilities<br><b>Total Liabilities</b><br>Shareholder's Equity   | 2,082<br>\$3,314<br>811<br>3,299<br>856<br>1,594<br>\$9,874<br>5,468<br>2,987<br>1,442<br><b>\$19,771</b>              | 2,180<br>\$3,534<br>875<br>2,975<br>701<br>1,647<br>\$9,732<br>4,868<br>2,857<br>1,556<br><b>\$19,013</b>            |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses<br>Short-term borrowings<br>Other current liabilities<br><i>Total Current Liabilities</i><br>Long-term debt, less current portion<br>Deferred tax liabilities, net<br>Other noncurrent liabilities<br><b>Total Liabilities</b><br><b>Shareholder's Equity</b><br>Paid-in capital - Common Stock                      | 2,082<br>\$3,314<br>811<br>3,299<br>856<br>1,594<br>\$9,874<br>5,468<br>2,987<br>1,442<br>\$19,771<br>\$5,416          | 2,180<br>\$3,534<br>875<br>2,975<br>701<br>1,647<br>\$9,732<br>4,868<br>2,857<br>1,556<br><b>\$19,013</b><br>\$3,215 |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses<br>Short-term borrowings<br>Other current liabilities<br><i>Total Current Liabilities</i><br>Long-term debt, less current portion<br>Deferred tax liabilities, net<br>Other noncurrent liabilities<br><b>Total Liabilities</b><br><b>Shareholder's Equity</b><br>Paid-in capital - Common Stock<br>Retained earnings | 2,082<br>\$3,314<br>811<br>3,299<br>856<br>1,594<br>\$9,874<br>5,468<br>2,987<br>1,442<br>\$19,771<br>\$5,416<br>6,323 | \$3,534<br>875<br>2,975<br>701<br>1,647<br>\$9,732<br>4,868<br>2,857<br>1,556<br><b>\$19,013</b><br>\$3,215<br>6,597 |  |  |  |  |
| Policy Liabilities:<br>Claims Payable<br>Reserves for future policy benefits<br><i>Total Policy Liabilities</i><br>Unearned Income<br>Accounts payable and accrued expenses<br>Short-term borrowings<br>Other current liabilities<br><i>Total Current Liabilities</i><br>Long-term debt, less current portion<br>Deferred tax liabilities, net<br>Other noncurrent liabilities<br><b>Total Liabilities</b><br><b>Shareholder's Equity</b><br>Paid-in capital - Common Stock                      | 2,082<br>\$3,314<br>811<br>3,299<br>856<br>1,594<br>\$9,874<br>5,468<br>2,987<br>1,442<br>\$19,771<br>\$5,416          | 2,180<br>\$3,534<br>875<br>2,975<br>701<br>1,647<br>\$9,732<br>4,868<br>2,857<br>1,556<br><b>\$19,013</b><br>\$3,215 |  |  |  |  |

#### Your Eyes and Smiles Insurance Company (Your Eyes) (Syllabus Reference: Learning Objective 1, 3, 4)

Your Eyes and Smiles Insurance Company, a leading provider of dental and vision benefits, offers managed care and indemnity programs. Since 1995, this private insurance company has offered innovative programs designed to control costs and provide quality vision and dental care. Your Eyes has been one of the early pioneers whose marketing methods underscored the impact of oral health on overall wellness. In early 2012, Your Eyes started adopting an accountable care approach to contract with dental providers that focus on various performance measures and has become one of the first dental carriers to earn URAC accreditation as a demonstration of its commitment to quality care. In tandem with its recent growth, Your Eyes' business strategy includes increasing their investment in mobile apps and online tools, such as cost estimator and assessment tools, which would enable its customers to engage with the company on a 24/7 basis.

Your Eyes' vision care network is comprised of independent ophthalmologists, optometrists, and retail chain locations nationwide. They cover well over 1.5 million members for vision benefits, primarily through employer-sponsored coverage.

The goal of Milos Columbo, the newly appointed CEO, is to expand its presence in the individual market. While the health insurance challenges faced by the underinsured and uninsured is rightfully grabbing national attention in recent years, Milos believes that dental health is receiving a lot less time and attention although its effects can be just as critical to overall health. Incidentally, his sister, Melina, had co-authored a widely acclaimed 2008 study published in the *American Journal of Public Health*, showing positive association between oral health and heart health. With more than half of the US population lacking even basic dental insurance coverage, Milos' business goal is to push the boundaries of traditional dental care insurance using cost-effective strategies. Under his leadership, Your Eyes is in the process of revamping its product suites to better suit the individual market.

Dental plan options currently offered include DHMO and PPO product suites sold to over 2.5 million enrollees primarily in the employer group market. The DHMO plans require enrollees to select a participating (network) dentist and have no deductibles or waiting period. DHMO plan options can be tailored to meet a group's needs, ranging from a plan that has no enrollee cost sharing for Class I, II, and III services to plans that cover Class I services at no enrollee charge. The higher priced PPO plans give access to dental care both inside and outside of its networks by simply paying a discounted fee for service.

Your Eyes has two dental provider networks: a Tight network with high discount levels and limited provider participation and a Broad network with greater provider participation but average discount levels. Network providers have agreed to accept these network allowances as payment in full for Your Eyes' covered members. In addition, a 90<sup>th</sup> percentile payment mechanism is offered with no specific provider network. Exhibit 3 shows the provider discount and penetration for the PPO plans varying by the associated network option.

The cost sharing provisions for the Company's highest selling dental PPO50 plan are outlined below:

| Exhibit 1 - Dental PPO50 Plan Benefits    |           |  |  |  |
|---|-----------|--|--|--|
| Deductible per Insured per Benefit Year   |           |  |  |  |
| Preferred Provider                        |           |  |  |  |
| Class I Services                          | None      |  |  |  |
| Class II and Class III Services           | \$50      |  |  |  |
| Non-Preferred Provider                    |           |  |  |  |
| Class I, Class II, and Class III Services | \$50      |  |  |  |
| Annual Maximum per Covered Person         |           |  |  |  |
| Annual Maximum per Covered Person         | \$1,500   |  |  |  |
| Waiting Period                            |           |  |  |  |
| Class I and Class II Services             | None      |  |  |  |
| Class III Services                        | 12 Months |  |  |  |

| Exhibit 2 - Dental Network Payment Rates                |      |     |  |  |  |  |
|---|------|-----|--|--|--|--|
| Preferred Non-Preferred<br>Provider Rates Provider Rate |      |     |  |  |  |  |
| Class I   | 100% | 80% |  |  |  |  |
| Class II  | 90%  | 60% |  |  |  |  |
| Class III   | 60%  | 30% |  |  |  |  |

| Exhibit 3 - Provider Discount |     |     |  |  |  |  |
|-------------------------------|-----|-----|--|--|--|--|
| Network Discount Penetration  |     |     |  |  |  |  |
| Tight                         | 35% | 40% |  |  |  |  |
| Broad                         | 20% | 65% |  |  |  |  |
| 90th Percentile               | 5%  | N/A |  |  |  |  |

Since 2014, Your Eyes has started offering pediatric dental benefits as a stand-alone-dental-plan carrier in both individual and SHOP Exchanges. Despite material investments on advertising campaigns and expansion of its network of pediatric dentists, they have not been able to gain significant market share in the pediatric dental market. The CFO envisions that an actuarially sound business strategy is needed to expand its market share from 4,500 pediatric enrollees in 2014 to 25,000 in 2016.

### The Thunderball Corporation (Thunderball)

(Syllabus Reference: Learning Objective 1, 3, 4)

The Thunderball Corporation is a large insurance company operating in the United States and Canada. The corporate vision is to be a comprehensive provider of long term insurance products. Thunderball seeks to offer competitive products earning reasonable return for stockholders while growing at a financially sustainable rate.

Thunderball offers Group Long-Term Disability, Group Life, and Group and Individual Long-Term Care.

#### **Long-Term Disability**

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Thunderball has experienced steady growth in Long-Term Disability sales. Exhibit 1 lists the incidence rates by gender. Exhibits 2a and 2b list the death and recovery rates<sup>1</sup> assumed for males in the LTD plans with 3 month elimination period and 6 month elimination period respectively.

| Exhibit 1 | Exhibit 1 - Claim Reserve Table for Open Claim per \$100 of Monthly Benefit |                               |                                 |  |  |  |  |  |
|-----------|---|-------------------------------|---------------------------------|--|--|--|--|--|
|           |   | Elimination Period = 3 months | Elimination Period = $6$ months |  |  |  |  |  |
| Sar       | 4.00  | Claim Incident Rate (per 1000 | Claim Incident Rate (per 1000   |  |  |  |  |  |
| Sex       | Age   | lives)                        | lives)                          |  |  |  |  |  |
| F         | under 30  | 1.0                           | 0.5                             |  |  |  |  |  |
| F         | 30-39   | 1.6                           | 1.0                             |  |  |  |  |  |
| F         | 40-49   | 2.5                           | 2.1                             |  |  |  |  |  |
| F         | 50-59   | 3.0                           | 2.6                             |  |  |  |  |  |
| F         | 60-64   | 4.0                           | 3.7                             |  |  |  |  |  |
| F         | 65-66   | 5.0                           | 4.8                             |  |  |  |  |  |
| М         | under 30  | 1.0                           | 0.5                             |  |  |  |  |  |
| М         | 30-39   | 1.4                           | 1.0                             |  |  |  |  |  |
| М         | 40-49   | 2.6                           | 2.1                             |  |  |  |  |  |
| М         | 50-59   | 3.4                           | 3.0                             |  |  |  |  |  |
| М         | 60-64   | 4.5                           | 4.2                             |  |  |  |  |  |
| М         | 65-66   | 5.5                           | 5.3                             |  |  |  |  |  |

<sup>&</sup>lt;sup>1</sup> Earlier durations (usually until 24 months) are typically listed more granular by month. Assume annualized rates for the sake of simplicity.

| Exhibit 2a - Death & Recovery - Males (3-month elimination period) |                    |      |      |      |      |      |      |      |      |
|--|--------------------|------|------|------|------|------|------|------|------|
|  |                    |      |      |      |      |      |      |      |      |
|  | Age at Disablement |      |      |      |      |      |      |      |      |
| Duration of Disablement  | 22                 | 27   | 32   | 37   | 42   | 47   | 52   | 57   | 62   |
| 1st year   | 0.51               | 0.47 | 0.44 | 0.42 | 0.40 | 0.37 | 0.34 | 0.30 | 0.28 |
| 2nd year   | 0.48               | 0.45 | 0.40 | 0.35 | 0.31 | 0.25 | 0.21 | 0.15 | 0.15 |
| 3rd year   | 0.37               | 0.34 | 0.28 | 0.22 | 0.18 | 0.15 | 0.13 | 0.11 | 0.08 |
| 4th year   | 0.25               | 0.21 | 0.17 | 0.15 | 0.12 | 0.11 | 0.09 | 0.08 | 0.07 |
| 5th year   | 0.16               | 0.15 | 0.12 | 0.10 | 0.09 | 0.09 | 0.09 | 0.08 | 0.09 |
| 6th year   | 0.09               | 0.08 | 0.07 | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 | 0.06 |
| 7th year   | 0.06               | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.06 | 0.07 | 0.06 |
| 8th year   | 0.05               | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 |
| 9th year   | 0.04               | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 |
| 10th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 |
| 11th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 |
| 12th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.06 | 0.07 | 0.08 | 0.09 |
| 13th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.06 | 0.07 | 0.09 | 0.11 |
| 14th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.06 | 0.07 | 0.09 | 0.13 |
| 15th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.06 | 0.07 | 0.11 | 0.15 |
| 16th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.08 | 0.11 | 0.13 | 0.16 |
| 17th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.08 | 0.11 | 0.15 | 0.17 |
| 18th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.09 | 0.11 | 0.16 | 0.19 |
| 19th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.09 | 0.11 | 0.17 | 0.20 |
| 20th year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.09 | 0.12 | 0.17 | 0.26 |
| 21st year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.09 | 0.12 | 0.19 | 0.29 |
| 22nd year  | 0.04               | 0.04 | 0.04 | 0.05 | 0.06 | 0.09 | 0.12 | 0.21 | 0.31 |
| 23rd year  | 0.04               | 0.04 | 0.05 | 0.05 | 0.06 | 0.10 | 0.15 | 0.23 | 0.34 |
| 24th year  | 0.04               | 0.04 | 0.05 | 0.05 | 0.06 | 0.12 | 0.16 | 0.25 | 0.35 |
| 25th year  | 0.04               | 0.04 | 0.05 | 0.06 | 0.08 | 0.12 | 0.16 | 0.27 | 0.36 |
| 26th year  | 0.04               | 0.04 | 0.05 | 0.06 | 0.08 | 0.13 | 0.16 | 0.27 | 0.38 |
| 27th year  | 0.04               | 0.04 | 0.05 | 0.06 | 0.08 | 0.13 | 0.16 | 0.27 | 0.41 |
| 28th year  | 0.05               | 0.05 | 0.06 | 0.09 | 0.11 | 0.19 | 0.23 | 0.25 | 0.42 |
| 29th year  | 0.05               | 0.05 | 0.06 | 0.09 | 0.11 | 0.19 | 0.23 | 0.27 | 0.43 |
| 30th year  | 0.05               | 0.05 | 0.06 | 0.09 | 0.11 | 0.19 | 0.23 | 0.27 | 0.45 |
| 31st year  | 0.05               | 0.05 | 0.06 | 0.09 | 0.11 | 0.21 | 0.27 | 0.31 | 0.46 |
| 32nd year  | 0.05               | 0.05 | 0.06 | 0.09 | 0.11 | 0.21 | 0.27 | 0.34 | 0.46 |
| 33rd year  | 0.05               | 0.05 | 0.06 | 0.09 | 0.13 | 0.23 | 0.28 | 0.35 | 0.48 |
| 34th year  | 0.07               | 0.07 | 0.08 | 0.10 | 0.13 | 0.25 | 0.31 | 0.36 | 0.50 |
| 35th year  | 0.07               | 0.07 | 0.08 | 0.10 | 0.13 | 0.26 | 0.33 | 0.40 | 0.52 |
| 36th year  | 0.08               | 0.08 | 0.08 | 0.12 | 0.15 | 0.26 | 0.35 | 0.45 | 0.55 |
| 37th year  | 0.08               | 0.08 | 0.08 | 0.12 | 0.15 | 0.27 | 0.37 | 0.49 | 0.60 |
| 38th year  | 0.08               | 0.08 | 0.08 | 0.12 | 0.19 | 0.27 | 0.40 | 0.55 | 0.65 |

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|                         | Exhibit 2b - Death & Recovery - Males (6-month elimination period) |      |      |      |             |      |      |      |      |
|-------------------------|--|------|------|------|-------------|------|------|------|------|
|                         |  |      |      | Age  | at Disabler | nent |      |      |      |
| Duration of Disablement | 22   | 27   | 32   | 37   | 42          | 47   | 52   | 57   | 62   |
| 1st year                | 0.40   | 0.36 | 0.33 | 0.31 | 0.25        | 0.22 | 0.19 | 0.15 | 0.10 |
| 2nd year                | 0.37   | 0.34 | 0.29 | 0.24 | 0.20        | 0.14 | 0.10 | 0.08 | 0.08 |
| 3rd year                | 0.22   | 0.19 | 0.17 | 0.17 | 0.13        | 0.12 | 0.10 | 0.08 | 0.08 |
| 4th year                | 0.16   | 0.12 | 0.10 | 0.09 | 0.08        | 0.07 | 0.07 | 0.06 | 0.06 |
| 5th year                | 0.14   | 0.08 | 0.08 | 0.07 | 0.07        | 0.07 | 0.06 | 0.06 | 0.06 |
| 6th year                | 0.07   | 0.06 | 0.06 | 0.05 | 0.05        | 0.05 | 0.05 | 0.05 | 0.06 |
| 7th year                | 0.05   | 0.04 | 0.04 | 0.04 | 0.04        | 0.04 | 0.04 | 0.05 | 0.06 |
| 8th year                | 0.04   | 0.04 | 0.04 | 0.04 | 0.04        | 0.04 | 0.04 | 0.04 | 0.06 |
| 9th year                | 0.03   | 0.04 | 0.04 | 0.04 | 0.04        | 0.04 | 0.04 | 0.04 | 0.07 |
| 10th year               | 0.03   | 0.04 | 0.04 | 0.04 | 0.04        | 0.04 | 0.04 | 0.04 | 0.07 |
| 11th year               | 0.03   | 0.04 | 0.04 | 0.04 | 0.04        | 0.04 | 0.04 | 0.04 | 0.07 |
| 12th year               | 0.02   | 0.03 | 0.03 | 0.03 | 0.04        | 0.03 | 0.04 | 0.05 | 0.07 |
| 13th year               | 0.02   | 0.03 | 0.03 | 0.03 | 0.04        | 0.04 | 0.04 | 0.07 | 0.08 |
| 14th year               | 0.02   | 0.03 | 0.03 | 0.03 | 0.04        | 0.04 | 0.04 | 0.07 | 0.09 |
| 15th year               | 0.02   | 0.02 | 0.02 | 0.03 | 0.04        | 0.04 | 0.05 | 0.07 | 0.11 |
| 16th year               | 0.02   | 0.02 | 0.02 | 0.03 | 0.04        | 0.05 | 0.08 | 0.10 | 0.12 |
| 17th year               | 0.02   | 0.02 | 0.02 | 0.04 | 0.04        | 0.05 | 0.08 | 0.11 | 0.13 |
| 18th year               | 0.02   | 0.02 | 0.02 | 0.04 | 0.04        | 0.05 | 0.08 | 0.12 | 0.15 |
| 19th year               | 0.02   | 0.02 | 0.02 | 0.04 | 0.04        | 0.05 | 0.08 | 0.12 | 0.16 |
| 20th year               | 0.02   | 0.02 | 0.02 | 0.04 | 0.04        | 0.05 | 0.12 | 0.17 | 0.22 |
| 21st year               | 0.02   | 0.02 | 0.02 | 0.04 | 0.05        | 0.05 | 0.12 | 0.19 | 0.25 |
| 22nd year               | 0.02   | 0.02 | 0.02 | 0.04 | 0.05        | 0.05 | 0.12 | 0.20 | 0.27 |
| 23rd year               | 0.02   | 0.02 | 0.03 | 0.04 | 0.05        | 0.06 | 0.13 | 0.22 | 0.28 |
| 24th year               | 0.02   | 0.02 | 0.03 | 0.04 | 0.05        | 0.06 | 0.15 | 0.23 | 0.28 |
| 25th year               | 0.02   | 0.02 | 0.03 | 0.04 | 0.05        | 0.06 | 0.15 | 0.25 | 0.29 |
| 26th year               | 0.02   | 0.02 | 0.03 | 0.05 | 0.06        | 0.06 | 0.15 | 0.25 | 0.31 |
| 27th year               | 0.02   | 0.02 | 0.03 | 0.05 | 0.06        | 0.07 | 0.16 | 0.25 | 0.33 |
| 28th year               | 0.03   | 0.03 | 0.04 | 0.05 | 0.06        | 0.07 | 0.21 | 0.25 | 0.33 |
| 29th year               | 0.03   | 0.03 | 0.04 | 0.05 | 0.06        | 0.07 | 0.22 | 0.27 | 0.35 |
| 30th year               | 0.03   | 0.03 | 0.04 | 0.05 | 0.06        | 0.08 | 0.22 | 0.27 | 0.35 |
| 31st year               | 0.03   | 0.03 | 0.04 | 0.06 | 0.07        | 0.09 | 0.22 | 0.27 | 0.37 |
| 32nd year               | 0.03   | 0.03 | 0.04 | 0.06 | 0.07        | 0.11 | 0.17 | 0.28 | 0.38 |
| 33rd year               | 0.03   | 0.03 | 0.04 | 0.06 | 0.07        | 0.13 | 0.17 | 0.29 | 0.38 |
| 34th year               | 0.05   | 0.05 | 0.06 | 0.06 | 0.07        | 0.13 | 0.21 | 0.29 | 0.38 |
| 35th year               | 0.05   | 0.05 | 0.06 | 0.07 | 0.08        | 0.14 | 0.22 | 0.30 | 0.39 |
| 36th year               | 0.06   | 0.06 | 0.06 | 0.07 | 0.09        | 0.14 | 0.23 | 0.30 | 0.40 |
| 37th year               | 0.06   | 0.06 | 0.06 | 0.07 | 0.11        | 0.15 | 0.23 | 0.30 | 0.40 |
| 38th year               | 0.06   | 0.06 | 0.06 | 0.07 | 0.12        | 0.15 | 0.25 | 0.34 | 0.41 |

#### **Long-Term Care**

Thunderball expanded into Long-Term Care (LTC) in late 1980's. Initially, Thunderball offered only group coverage. After a few years, experience with individual coverage conversion quickly convinced management that Thunderball should also sell direct individual coverage. Today, all LTC policies are administered together whether issued through a group or directly to individuals. Thunderball offers 3 plans with different elimination periods and benefit periods with monthly premiums. The benefits and claim costs are seen below:

| Exhibit 3 - Benefits |          |          |  |  |  |  |
|----------------------|----------|----------|--|--|--|--|
| Elimination Benefit  |          |          |  |  |  |  |
| Benefit              | Period   | Period   |  |  |  |  |
| Level                | (Months) | (Years)  |  |  |  |  |
| 1                    | 3        | 2        |  |  |  |  |
| 2                    | 6        | 5        |  |  |  |  |
| 3                    | 12       | Lifetime |  |  |  |  |

| Exhibit 4 - Policy Data |            |                |             |               |            |           |  |  |
|-------------------------|------------|----------------|-------------|---------------|------------|-----------|--|--|
|                         | Annualized |                | Elimination |               |            |           |  |  |
| Policy #                | Premium    | Benefit Period | Period      | Daily Benefit | Issue Year | Issue Age |  |  |
| 1                       | 2,136.25   | 2 Years        | 3 Months    | 70.00         | 1988       | 58        |  |  |
| 2                       | 4,448.89   | 2 Years        | 3 Months    | 90.00         | 1989       | 70        |  |  |
| 3                       | 3,923.56   | Lifetime       | 12 Months   | 90.00         | 1992       | 65        |  |  |
| 4                       | 878.35     | 5 Years        | 6 Months    | 100.00        | 1993       | 52        |  |  |
| 5                       | 2,059.50   | 2 Years        | 3 Months    | 100.00        | 1994       | 64        |  |  |
| 6                       | 719.18     | 5 Years        | 6 Months    | 100.00        | 1996       | 57        |  |  |
| 7                       | 778.51     | Lifetime       | 12 Months   | 70.00         | 1997       | 57        |  |  |
| 8                       | 4,974.12   | Lifetime       | 12 Months   | 90.00         | 1998       | 75        |  |  |
| 9                       | 2,144.93   | 5 Years        | 6 Months    | 120.00        | 1999       | 65        |  |  |
| 10                      | 1,513.92   | Lifetime       | 12 Months   | 180.00        | 2000       | 45        |  |  |
| 11                      | 1,265.04   | 2 Years        | 3 Months    | 120.00        | 2001       | 65        |  |  |
| 12                      | 7,760.27   | 2 Years        | 3 Months    | 190.00        | 2002       | 82        |  |  |
| 13                      | 5,530.56   | 5 Years        | 6 Months    | 120.00        | 2003       | 70        |  |  |
| 14                      | 2,703.54   | Lifetime       | 12 Months   | 140.00        | 2004       | 52        |  |  |

| Attained | Benefit Level 1 |          |          | <b>100 Daily Benefit</b><br>Benefit Level 2 - |          | Renefit Loval ? |
|----------|-----------------|----------|----------|---|----------|-----------------|
| Age      | Male            | Female   | Male     | Female  | Male     | Female          |
| <40      | 58.40           | 73.00    | 121.67   | 165.91  | 243.34   | 663.6           |
| 41       | 59.57           | 73.73    | 124.10   | 167.57  | 244.56   | 670.2           |
| 42       | 60.76           | 74.47    | 126.58   | 169.25  | 245.78   | 676.9           |
| 43       | 61.98           | 75.21    | 129.13   | 170.93  | 247.01   | 683.7           |
| 44       | 63.22           | 75.96    | 131.71   | 172.64  | 248.25   | 690.5           |
| 45       | 64.48           | 76.72    | 134.33   | 174.36  | 249.49   | 697.5           |
| 46       | 65.77           | 77.49    | 137.02   | 176.11  | 250.74   | 704.4           |
| 47       | 67.09           | 78.26    | 139.77   | 177.86  | 251.99   | 701.1           |
| 48       | 68.43           | 79.04    | 142.56   | 179.64  | 253.25   | 711.5           |
| 49       | 69.80           | 79.83    | 145.42   | 181.43  | 255.25   | 715.6           |
| 50       | 71.20           | 80.63    | 148.33   | 183.25  | 255.79   | 723.0           |
| 51       | 72.62           | 81.44    | 148.33   | 185.09  | 257.07   | 733.0           |
| 52       | 72.02           | 82.25    | 154.31   | 186.93  | 258.36   | 740.4.          |
| 53       | 74.07           | 83.07    | 157.40   | 188.80  | 258.50   | 747.82          |
| 54       | 73.33           | 83.90    | 160.54   | 190.68  | 260.95   | 753.3           |
| 55       | 77.00           | 83.90    | 163.75   | 190.08  | 262.25   | 702.8           |
|          |                 |          |          |   |          |                 |
| 56       | 80.17           | 85.59    | 167.02   | 194.52  | 267.23   | 778.1           |
| 57       | 81.77           | 86.45    | 170.35   | 196.48  | 272.56   | 785.9           |
| 58       | 83.41           | 87.31    | 173.77   | 198.43  | 278.03   | 793.82          |
| 59       | 85.08           | 88.18    | 177.25   | 200.41  | 283.60   | 801.7           |
| 60       | 89.33           | 89.94    | 178.66   | 195.52  | 285.86   | 809.7           |
| 61       | 93.80           | 92.64    | 187.60   | 201.39  | 300.16   | 817.8           |
| 62       | 98.49           | 96.35    | 196.98   | 209.46  | 315.17   | 830.1           |
| 63       | 103.41          | 100.20   | 206.82   | 217.83  | 330.91   | 842.6           |
| 64       | 108.58          | 104.21   | 217.16   | 226.54  | 347.46   | 855.2           |
| 65       | 119.44          | 109.42   | 229.69   | 237.87  | 356.02   | 868.0           |
| 66       | 137.36          | 114.89   | 264.15   | 249.76  | 409.43   | 885.4           |
| 67       | 164.83          | 132.12   | 305.24   | 287.22  | 473.12   | 903.1           |
| 68       | 206.04          | 151.94   | 381.56   | 330.30  | 591.42   | 921.2           |
| 69       | 267.85          | 174.73   | 496.02   | 379.85  | 768.83   | 944.2           |
| 70       | 361.60          | 200.94   | 645.71   | 436.83  | 968.57   | 967.8           |
| 71       | 488.16          | 231.08   | 871.71   | 481.42  | 1,307.57 | 992.0           |
| 72       | 659.02          | 265.74   | 1,176.82 | 553.63  | 1,765.23 | 1,016.8         |
| 73       | 889.68          | 318.89   | 1,533.93 | 664.35  | 2,300.90 | 1,042.2         |
| 74       | 1,156.58        | 398.61   | 1,994.10 | 830.44  | 2,991.15 | 1,328.7         |
| 75       | 1,503.55        | 518.19   | 2,505.92 | 1,079.56                                      | 3,633.58 | 1,727.3         |
| 76       | 1,879.44        | 699.56   | 3,132.40 | 1,399.12                                      | 4,541.98 | 2,238.5         |
| 77       | 2,255.33        | 944.41   | 3,758.88 | 1,888.82                                      | 5,199.28 | 3,022.1         |
| 78       | 2,593.63        | 1,274.95 | 4,183.27 | 2,549.90                                      | 5,856.58 | 3,952.3         |
| 79       | 2,852.99        | 1,657.44 | 4,457.80 | 3,314.88                                      | 6,240.92 | 5,138.0         |
| 80       | 2,995.64        | 2,154.67 | 4,538.85 | 4,309.34                                      | 6,242.76 | 6,679.4         |

#### **Group Life**

Thunderball offers group life coverage for employers to provide to the employees. Below are the monthly manual claim rates per \$1,000 of coverage.

| Exhibit 6 - Monthly Manual<br>Claim Rate per \$1,000 of<br>coverage |       |        |  |
|---|-------|--------|--|
| Age   | Male  | Female |  |
| 20-25   | 0.61  | 0.32   |  |
| 26-30   | 0.78  | 0.35   |  |
| 31-35   | 0.87  | 0.45   |  |
| 36-40   | 0.98  | 0.63   |  |
| 41-45   | 1.39  | 0.90   |  |
| 46-50   | 2.16  | 1.25   |  |
| 51-55   | 3.64  | 1.95   |  |
| 56-60   | 6.41  | 3.46   |  |
| 61-65   | 11.65 | 6.80   |  |

#### Moonraker Energy (Moonraker)

(Syllabus Reference: Learning Objective 3, 4)

Moonraker Energy is a large company that has a network of laboratories and offices to support energy industries. Moonraker offers a broad range of consulting engagements including strategies for improving efficiencies in manufacturing and logistics, testing, inspection, and certification of a wide variety of products.

As of 2014, Moonraker's employee census includes 11,875 full-time (working 30 hours or more) and 700 part-time employees. Exhibit 2 shows a census of the full-time employees. Moonraker plans to expand its core services to pharmaceutical and biotech industries. Moonraker is actively hiring research chemists, inspectors, and biostatisticians to expand its market reach.

Due to its statistically credible size, Moonraker's health insurance plans are 100% experience rated. Moonraker currently offers two fully-insured group health plan options to its full-time employees. Employees have the option of a PPO plan with different cost-sharing for in and out of network and a high deductible health plan (HDHP). Exhibit 3 shows the plans available to their employees.

The newly appointed Benefit Director is exploring if it is advantageous to replace the fully-insured plans with a self-insured plan and an ASO arrangement. Possible self-insured plan options include mirroring the fully insured benefit models or adapting it to meet the specific needs of employees through a customized suite of benefit and product options.

| Exhibit 1 - Group Disability Plan Benefits |                       |                       |  |  |
|--|-----------------------|-----------------------|--|--|
| Description                                | Plan 1                | Plan 2                |  |  |
| Monthly Benefit                            | 50% of Monthly Salary | 80% of Monthly Salary |  |  |
| Monthly Maximum Benefit                    | \$3,500               | \$5,000               |  |  |
| Elimination/Waiting Period                 | 3 Months              | 3 Months              |  |  |
| Cost of Living Adjustment                  | 0%                    | 3%                    |  |  |
| Premium Cost Sharing                       | 100% Employer Paid    | 80% Employer Paid     |  |  |

Moonraker offers a group disability for all its employees.

At no additional cost, Moonraker offers a group term life insurance benefit equal to the annual salary and Accidental Death and Dismemberment benefit equal to twice the annual salary. Employees are provided the option to buy supplemental life insurance with a coverage level of 2.0, 3.0, or 4.0 times the annual salary.

The employee census is given below:

| Exhibit 2 - Census |       |             |               |  |  |
|--------------------|-------|-------------|---------------|--|--|
|                    |       | # Full Time | Average       |  |  |
| Sex                | Age   | Employees   | Annual Salary |  |  |
| F                  | <25   | 23          | \$26,000      |  |  |
| F                  | 25-29 | 178         | 42,000        |  |  |
| F                  | 30-34 | 950         | 51,000        |  |  |
| F                  | 35-39 | 1,128       | 59,000        |  |  |
| F                  | 40-44 | 1,425       | 68,000        |  |  |
| F                  | 45-49 | 831         | 74,000        |  |  |
| F                  | 50-54 | 207         | 79,000        |  |  |
| F                  | 55-59 | 40          | 84,000        |  |  |
| F                  | 60-64 | 22          | 89,000        |  |  |
| М                  | <25   | 47          | 31,000        |  |  |
| М                  | 25-29 | 237         | 45,000        |  |  |
| М                  | 30-34 | 1,068       | 56,000        |  |  |
| М                  | 35-39 | 1,425       | 63,500        |  |  |
| М                  | 40-44 | 1,900       | 71,000        |  |  |
| М                  | 45-49 | 1,425       | 76,000        |  |  |
| М                  | 50-54 | 593         | 82,000        |  |  |
| М                  | 55-59 | 356         | 89,000        |  |  |
| М                  | 60-64 | 20          | 98,000        |  |  |
| То                 | tal   | 11,875      |               |  |  |

| Exhibit 3 - Medical Benefits  |   |   |   |  |  |
|---|---|---|---|--|--|
|   | <u>P1</u>   | 20  | HDHP  |  |  |
|   | In-Network  | Out-of-Network  | Benefits  |  |  |
| Annual Deductible<br>Deductible does not apply to services denoted<br>with *                                | \$500 per member of \$1,500 per family  | \$500 per member of \$1,500 per family  | \$3,000 per member of \$6,000 per family  |  |  |
| Member Coinsurance  | 10%   | 30%   | 0%  |  |  |
| Out-of-Pocket Limit   | \$2,500 per member or \$7,500 per family  | \$4,000 per member or \$12,000 per family   | \$3,000 per member or \$6,000 per family  |  |  |
| Benefits  |   |   |   |  |  |
| Office Visits   | \$25 copay per visit  | 30% coinsurance   | 0% coinsurance after deductible   |  |  |
| Preventative Care Services  | Covered in Full *   | Covered in Full *   | Covered in Full *   |  |  |
| Maternity Care<br>Routine outpatient prenatal and postpartum visits   | Covered in Full *   | Covered in Full *   | Covered in Full *   |  |  |
| <b>Chiropractic/Manipulative Therapy</b><br>10 visits per calendar year                                     | 10% coinsurance   | 30% coinsurance   | 0% coinsurance after deductible   |  |  |
| Acupuncture<br>12 visits per calendar year  | 10% coinsurance   | 30% coinsurance   | 0% coinsurance after deductible   |  |  |
| Emergency care  | \$150 copay + 10% coinsurance   | \$100 copay + 10% coinsurance   | 0% coinsurance after deductible   |  |  |
| <b>Skilled Nursing</b><br>60 days per calendar year   | 10% coinsurance   | 30% coinsurance   | 0% coinsurance after deductible<br>\$10,000 Calendar Year Maximum   |  |  |
| Adult Vision<br>1 routine exam per year; annual hardware<br>allowance                                       | \$10 primary/ \$10 specialty copay per visit<br>\$100 toward glasses or contact lenses*   | \$10 primary/ \$10 specialty copay per visit<br>\$100 toward glasses or contact lenses*                   | \$20 primary/ \$20 specialty copay per visit<br>\$100 toward glasses or contact lenses*                   |  |  |
| Pediatric Vision<br>1 routine exam per year; Hardware - 1 paid of<br>lenses and frames or contacts per year | Covered in Full *   | Covered in Full *   | Covered in Full *   |  |  |
| Pediatric Dental<br>Preventative and restorative services   | Preventative services covered in full *<br>Other services subject to dental deductible and<br>coinsurance   | Preventative services covered in full *<br>Other services subject to dental deductible and<br>coinsurance | Preventative services covered in full *<br>Other services subject to dental deductible and<br>coinsurance |  |  |
| Prescription Drugs<br>Cost per 30-day supply  | Filled at pharmacy:<br>\$10 preferred generic*; 20% preferred brand*<br>including specialty brand*<br>Filled by mail order:<br>\$5 preferred generic*; 15% preferred brand*<br>including specialty brand* | Filled at pharmacy:<br>20% coinsurance; including specialty brand*  | 0% coinsurance after deductible   |  |  |

\* Deductible does not apply to services denoted with \*

# Dr. No's Herbal Tea (Dr. No's)

(Syllabus Reference: Learning Objective 3, 4)

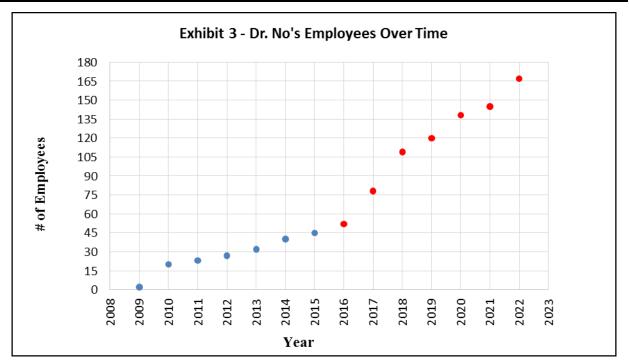
Dr. No's Herbal Tea is a startup firm, co-founded by Dr. No and Dr. Honey in 2009. Dr. No's currently employs 45 non-union employees. Due to the increasing popularity of its organic spiced herbal tea products, Dr. No's has plans to significantly increase its employee size in the next several years to meet its growing operational and marketing needs.

Dr. No's started offering a fully insured managed care health plan, with generous disease management programs for chronic illnesses (such as diabetes, asthma), to its employees in 2011. Dr. No's provides all employees with a subsidy of \$100 PMPM towards the 2014 health insurance premium shown below:

| Exhibit 1 - Premium PMPM |        |          |         |  |  |
|--------------------------|--------|----------|---------|--|--|
| Single                   | EE +   | EE +     | Family  |  |  |
| Single                   | Spouse | Children | 1 uning |  |  |
| \$351                    | \$705  | \$452    | \$857   |  |  |

The 2014 census and projected number of employees in 2015-2022 is given below:

|     | Exhibit 2 - Census |                   |                  |  |  |
|-----|--------------------|-------------------|------------------|--|--|
| Sex | Age                | # of<br>Employees | Annual<br>Salary |  |  |
| F   | <25                | 0                 | N/A              |  |  |
| F   | 25-29              | 2                 | \$28,500         |  |  |
| F   | 30-34              | 5                 | \$33,000         |  |  |
| F   | 35-39              | 7                 | \$37,500         |  |  |
| F   | 40-44              | 3                 | \$48,400         |  |  |
| F   | 45-49              | 2                 | \$55,900         |  |  |
| F   | 50-54              | 1                 | \$66,700         |  |  |
| F   | 55-59              | 1                 | \$79,300         |  |  |
| F   | 60-64              | 1                 | \$91,700         |  |  |
| М   | <25                | 1                 | \$22,000         |  |  |
| М   | 25-29              | 0                 | N/A              |  |  |
| М   | 30-34              | 5                 | \$33,000         |  |  |
| М   | 35-39              | 6                 | \$37,000         |  |  |
| М   | 40-44              | 6                 | \$46,750         |  |  |
| М   | 45-49              | 1                 | \$55,400         |  |  |
| М   | 50-54              | 2                 | \$67,600         |  |  |
| М   | 55-59              | 1                 | \$78,250         |  |  |
| М   | 60-64              | 1                 | \$90,500         |  |  |
|     | Total              | 45                |                  |  |  |



Despite the employer subsidy, the co-founders are concerned by the low participation in the health plan. Company management is also evaluating strategies to control premium costs that have steadily risen in the recent years. They are considering many possible alternatives, such as:

- Replacing the currently offered managed care plan option with an EPO plan with a more restricted network and lower premium,
- Self-insurance, or
- Dropping the employer sponsored health insurance and providing coverage through the SHOP Exchange.

# **Another Day, Inc. (Another Day)**

Another Day is a company headquartered in Toronto, Ontario with employees and locations across Canada. Over the past several years, it has experienced rapid growth and now offers benefit coverage to 1,500 active employees and 350 retirees. Its benefit plan (both active and retiree) is fully insured on a non-refund basis, with Another Day fully subsidizing the premiums.

A summary of the active benefit plan and applicable premium rates is provided in Exhibit 1 below:

| Benefit                       | Coverage Level                                     | Monthly Rate              |
|-------------------------------|--|---------------------------|
| benent                        | Coverage Level                                     | wonting rate              |
| Basic Life Insurance          | 2 times annual salary up to \$500,000              | \$0.463 per \$1,000       |
| Basic AD&D                    | Matches Basic Life Insurance volume                | \$0.030 per \$1,000       |
|                               |  | 30.030 per 31,000         |
| Short Term Disability         | 75% of weekly salary up to \$1,000                 | \$0.660 per \$10          |
|                               | Taxable Plan, 26 week benefit period               |                           |
| Long Term Disability          | 66.67% of monthly salary up to \$5,000             | \$2.550 per \$100         |
|                               | Taxable Plan, 26 week elimination period           | \$2.550 per \$100         |
| Extended Health Care          |  | \$85/single; \$187/family |
| - Drugs                       | 90% with \$1,000 employee out-of-pocket maximum    | 505/5mgrc, 510/710mmy     |
| - Paramedical Practitioners   | 100%; \$500 per practitioner per year              |                           |
| - Hospital                    | 100% semi-private room                             |                           |
| - Vision                      | 100%; \$200 per 12 months                          |                           |
| - Emergency Out-of-Country    | 60 day maximum, \$1,000,000 lifetime maximum       |                           |
| - Other Supplies and Services | 100%   |                           |
| Dental                        |  | \$54/single; \$119/family |
| - Basic                       | 100%, \$2,500 annual maximum (combined with major) | ., , , , ,                |
| - Major                       | 50%, \$2,500 annual maximum (combined with basic)  |                           |
| - Orthodontics                | 50%; \$1,500 lifetime maximum                      |                           |
| Health Spending Account       | \$500 per year                                     | Paid as incurred          |
|                               | Credit carryforward provision                      |                           |

Note: All benefits terminate at the earlier of retirement or age 65

A summary of the retiree benefit plan and applicable premium rates is provided in Exhibit 2 below:

| Exhibit 2:                    |  |                           |
|-------------------------------|--|---------------------------|
| <u>Benefit</u>                | Coverage Level                               | Monthly Rate              |
|                               |  |                           |
| Basic Life Insurance          | Flat \$15,000                                | \$0.463 per \$1,000       |
|                               |  |                           |
| Extended Health Care          |  | \$85/single; \$187/family |
| - Drugs                       | 90% with \$1,000 out-of-pocket maximum       |                           |
| - Paramedical Practitioners   | 100%; \$500 per practitioner per year        |                           |
| - Hospital                    | 100% semi-private room                       |                           |
| - Vision                      | 100%; \$200 per 12 months                    |                           |
| - Emergency Out-of-Country    | 60 day maximum, \$1,000,000 lifetime maximum |                           |
| - Other Supplies and Services | 100%   |                           |

Benefits terminate upon death of the retiree with a 24 month extension for surviving spouses. Further, only active employees with a minimum of 5 years of continuous service are eligible at or after age 55.

Summaries of the employees and retirees of Another Day are provided in Exhibit 3 and Exhibit 4 below.

| Active Data |                  |               |        |           |       |
|-------------|------------------|---------------|--------|-----------|-------|
|             | Employee Infor   | rmation       |        | Headcount | :     |
| Age         | Years of Service | Annual Salary | Single | Family    | Total |
| 25          | 4                | \$50,000      | 175    | 50        | 225   |
| 35          | 13               | \$65,000      | 100    | 300       | 400   |
| 45          | 23               | \$80,000      | 50     | 375       | 425   |
| 53          | 1                | \$85,000      | 5      | 10        | 15    |
| 55          | 30               | \$100,000     | 50     | 275       | 325   |
| 57          | 3                | \$90,000      | 5      | 5         | 10    |
| 65          | 32               | \$105,000     | 35     | 40        | 75    |
| 75          | 35               | \$110,000     | 20     | 5         | 25    |
|             |                  |               | 440    | 1,060     | 1,500 |

Average Family Size: 2.3

#### Exhibit 4:

| Retiree Data |             |        |           |       |  |
|--------------|-------------|--------|-----------|-------|--|
| Retiree      | Information |        | Headcount |       |  |
| Age          | Years Since |        |           |       |  |
| (years)      | Retirement  | Single | Family    | Total |  |
| 55           | 0           | 50     | 100       | 150   |  |
| 60           | 4           | 37     | 33        | 70    |  |
| 65           | 8           | 33     | 30        | 63    |  |
| 70           | 12          | 30     | 14        | 44    |  |
| 75           | 16          | 21     | 2         | 23    |  |
|              |             | 171    | 179       | 350   |  |

Average Family Size: 2.0

A summary of Extended Health Care claims experience for both actives and retirees over the period 2012 to 2014 can be found in Exhibit 5 below:

| Exhibit 5: Extended Health Care Claims Experience     |               |              |              |
|---|---------------|--------------|--------------|
| Active Claims Experience                              |               |              |              |
| Calendar Year   | 2012          | 2013         | 2014         |
| Total Paid Claims (Including Pooled)                  | \$<br>977,000 | \$ 1,512,000 | \$ 2,286,000 |
| Total Pooled Claims                                   | \$<br>77,000  | \$ 185,000   | \$ 190,000   |
| Number of Covered Employees                           |               |              |              |
| - Single  | 225           | 350          | 440          |
| - Family  | 475           | 700          | 1060         |
| Administrative Expenses and Taxes: 12% of paid claims |               |              |              |

Pooling Charge: 5.5% of paid claims

Pooling Arrangement: Large Amount Pooling of claims in excess of \$25,000 (inside and outside of Canada) per covered individual.

| Retiree Claims Experience            |               |    |         |    |         |
|--------------------------------------|---------------|----|---------|----|---------|
| Calendar Year                        | 2012          |    | 2013    |    | 2014    |
| Total Paid Claims (Including Pooled) |               |    |         |    |         |
| - Under 65                           | \$<br>427,000 | \$ | 457,000 | \$ | 507,000 |
| - 65 and Over                        | \$<br>77,000  | \$ | 88,000  | \$ | 113,000 |
| Total Pooled Claims                  |               |    |         |    |         |
| - Under 65                           | \$<br>12,000  | \$ | 43,000  | \$ | 35,000  |
| - 65 and Over                        | \$<br>-       | \$ | -       | \$ | 5,000   |
| Number of Covered Employees          |               |    |         |    |         |
| - Under 65                           |               |    |         |    |         |
| - Single                             | 71            |    | 75      |    | 87      |
| - Family                             | 116           |    | 123     |    | 133     |
| - 65 and Over                        |               |    |         |    |         |
| - Single                             | 55            |    | 67      |    | 84      |
| - Family                             | 33            |    | 35      |    | 46      |
|                                      |               |    |         |    |         |

Administrative Expenses and Taxes: 12% of paid claims

Pooling Charge: 5.5% of paid claims

Pooling Arrangement: Large Amount Pooling of claims in excess of \$25,000 (inside and outside of Canada) per covered individual.

Another Day has employed Skyfall Canada to assist with the design and pricing of its active and retiree benefit plans as well as the preparation of its financial statements for the post-retirement benefit plan.