



Case Study

FALL 2017/SPRING 2018

Group & Health Core, Canada Exam

EXAM GHCORC

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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 (Generic/Preferred Brand/Non-Preferred Brand/Specialty)	\$5/\$40/\$60/\$100 IN/ All Tiers 30% Coins OON	\$10/\$50/\$75/\$150 IN/ All Tiers 40% Coins OON	\$10/\$50/\$75/20% IN/ 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	Quantum Health Direct	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 (Generic/Preferred Brand/Non-Preferred Brand/Specialty)	Deductible + Coinsurance	Deductible + Coinsurance	\$10/\$50/\$100/\$150 IN 50% All Tiers OON

Exhibit 1 (con't) - Benefit Summary (Exchange Plans)		
Benefit Category	Quantum Health Premium	Quantum Health 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 (Generic/Preferred Brand/Non-Preferred Brand/Specialty)	\$10/\$35/\$75/\$150 IN 50% All Tiers OON	\$5/\$25/\$75/35% Coins IN 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>
 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							
Claims Dollar Interval		2012		2013		2014	
		Cumulative Frequency	Cumulative Annual Cost	Cumulative Frequency	Cumulative Annual Cost	Cumulative Frequency	Cumulative 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						
	2012		2013		2014	
Service Category	Utilization /1,000	Allowed Cost	Utilization /1,000	Allowed Cost	Utilization /1,000	Allowed 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 Experience						
Quantum Legacy III - Individual						
Calendar Month	Members	Premiums	Paid Claims	Completion Factor	Incurred 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		27,938,068	93.1%
2013 Total	106,398	32,297,626	25,849,763		25,849,763	80.0%
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						
HMO - Individual						
Calendar Month	Members	Premiums	Paid Claims	Completion Factor	Incurred 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						
PPO - Individual						
Calendar Month	Members	Premiums	Paid Claims	Completion Factor	Incurred 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					
Total - Individual (HMO & PPO)					
Calendar Month	Members	Premiums	Paid Claims	Incurred 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 Email 2****

From: Strawberry Fields <SFields@quantum.com>
 To: You <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							
Claims Dollar Interval		2012		2013		2014	
		Cumulative Frequency	Cumulative Annual Cost	Cumulative Frequency	Cumulative Annual Cost	Cumulative Frequency	Cumulative 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						
Service Category	2012		2013		2014	
	Utilization/ 1,000	Allowed Cost	Utilization/ 1,000	Allowed Cost	Utilization/ 1,000	Allowed 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 Experience						
Quantum Legacy III - Small Group						
Calendar Month	Members	Premiums	Paid Claims	Completion Factor	Incurred 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	0.9420	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	1,305,971	1,018,315	0.8084	1,259,644	96.5%
12-2014	3,830	1,330,917	934,110	0.6487	1,439,982	108.2%
2012 Total	70,064	21,076,580	16,363,366		16,363,366	77.6%
2013 Total	63,904	20,733,892	17,550,933		17,550,933	84.6%
2014 Total	52,280	14,747,110	12,304,029		13,455,071	91.2%
Total	186,248	56,557,582	46,218,328		47,369,370	83.8%

Exhibit 7 (con't) - Monthly Experience						
HMO - Small Group						
Calendar Month	Members	Premiums	Paid Claims	Completion Factor	Incurred 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						
PPO - Small Group						
Calendar Month	Members	Premiums	Paid Claims	Completion Factor	Incurred 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%

Exhibit 7 (con't) - Monthly Experience					
Total - Small Group (HMO & PPO)					
Calendar Month	Members	Premiums	Paid Claims	Incurred 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, 2015
Subject: 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
Average Wholesale Price	Generic	\$45.00	\$45.00	\$45.00
	Preferred Brand	\$200.00	\$200.00	\$200.00
	Non-Preferred Brand	\$235.00	\$235.00	\$235.00
	Specialty	\$2,585.00	\$2,675.00	\$2,700.00
Discounts	Generic	70%	75%	75%
	Preferred Brand	15%	20%	25%
	Non-Preferred Brand	10%	12%	15%
	Specialty	8%	8%	10%
Dispensing Fees	Generic	\$1.50	\$1.50	\$2.00
	Preferred Brand	\$1.50	\$1.50	\$2.00
	Non-Preferred Brand	\$1.50	\$1.50	\$2.00
	Specialty	\$1.50	\$1.50	\$2.00

Exhibit 9 - Financial Statements			
Income Statement			
(In thousands)		For the Years Ending December 31,	
Revenue		2014	2013
Premiums		85,128	53,032
Individual HMO		22,637	-
Individual PPO		6,407	-
Individual Grandfathered		18,780	32,298
<i>Total Individual</i>		47,823	32,298
Small Group HMO		14,860	-
Small Group PPO		7,699	-
Small Group Grandfathered		14,747	20,734
<i>Total Small Group</i>		37,305	20,734
Administrative fees Income		32	22
Miscellaneous income		1,703	1,061
<i>Total operating revenue</i>		86,863	54,114
Net investment income		1,340	1,079
Total Revenues		\$ 88,203	\$ 55,193
Expenses			
Benefit expense		67,119	43,401
Individual HMO		18,338	-
Individual PPO		5,232	-
Individual Grandfathered		15,223	25,850
<i>Total Individual</i>		38,794	25,850
Small Group HMO		10,435	-
Small Group PPO		5,586	-
Small Group Grandfathered		12,304	17,551
<i>Total Small Group</i>		28,325	17,551
Commissions		1,541	757
General insurance expenses		9,534	5,780
Insurance taxes, licenses, and fees, excluding federal income tax		1,703	1,061
Write-in		752	576
Total expenses		\$ 80,649	\$ 51,575
Income before income tax expense		7,554	3,618
Income tax expense		2,568	1,230
Net Income		\$ 4,986	\$ 2,388

Exhibit 9 (continued) - Financial Statements		
Balance Sheet		
<i>(In thousands)</i>		
Assets	December 31, 2014	December 31, 2013
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	11
Other receivables	995	995
Other	1,712	1,712
Electronic data processing equipment	859	859
<i>Total current assets</i>	<i>21,081</i>	<i>20,487</i>
Long-term investments	17,505	17,831
Net property, plant, and equipment	906	880
Goodwill	151	163
Other intangible assets	395	396
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
<i>Total policy liabilities</i>	<i>9,795</i>	<i>9,739</i>
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
<i>Total current liabilities</i>	<i>14,667</i>	<i>14,797</i>
Drafts outstanding	533	632
Payable for securities	655	938
Remittances	3,102	2,987
Other noncurrent liabilities	815	787
Total Liabilities	19,772	20,141
Shareholder's Equity		
Common capital stock	6,500	6,500
Retained earnings	13,597	12,951
Unassigned funds (surplus)	422	410
Total Shareholder's Equity	20,519	19,861
Total Liabilities and Owner's Equity	\$ 40,291	\$ 40,002

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-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 Coverage	70% (\$1,000 annual OOP max)*	70% (\$1,000 annual OOP max)*	75% (\$1,000 annual OOP max)*	90% (\$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 Coverage	80% (\$200 per calendar year per practitioner max)	90% (\$500 per calendar year per practitioner max)	90% (\$500 per calendar year per practitioner max)	100% (\$1,000 per calendar year per practitioner max)
Emergency Out of Country Coverage	60 travel days (\$1,000,000 annual max)	180 travel days (\$1,000,000 annual max)	180 travel days (\$1,000,000 annual max)	180 travel days (\$1,000,000 annual max)
Vision Coverage	Not covered	100% (\$300 per 24 months max)	100% (\$300 per 24 months max)	100% (\$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% (\$2,000 lifetime max)	50% (\$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.

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

Exhibit 2b - Annual Trend Data						
	2012-2013		2013-2014		2014-2015	
	Utilization	Unit Cost	Utilization	Unit Cost	Utilization	Unit Cost
Prescription Drug 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 Coverage	5.1%	2.4%	4.2%	3.7%	4.0%	3.9%
Emergency Out of Country Coverage	3.1%	4.7%	2.7%	1.1%	1.6%	1.8%
Vision 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 Statements			
Living Daylights		Income Statement	
(In thousands)		For the Years Ending December 31,	
Revenue		2014	2013
	Premiums	\$7,660	\$7,223
	Other revenue	1,542	1,254
	<i>Total operating revenue</i>	<i>9,202</i>	<i>8,477</i>
	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		Balance Sheet
(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
<i>Total Current Assets</i>	<i>\$20,711</i>	<i>\$19,705</i>
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 and Shareholder's Equity		
Liabilities		
Current Liabilities		
Policy Liabilities:		
Claims Payable	\$1,232	\$1,354
Reserves for future policy benefits	2,082	2,180
<i>Total Policy Liabilities</i>	<i>\$3,314</i>	<i>\$3,534</i>
Unearned Income	811	875
Accounts payable and accrued expenses	3,299	2,975
Short-term borrowings	856	701
Other current liabilities	1,594	1,647
<i>Total Current Liabilities</i>	<i>\$9,874</i>	<i>\$9,732</i>
Long-term debt, less current portion	5,468	4,868
Deferred tax liabilities, net	2,987	2,857
Other noncurrent liabilities	1,442	1,556
Total Liabilities	\$19,771	\$19,013
Shareholder's Equity		
Paid-in capital - Common Stock	\$5,416	\$3,215
Retained earnings	6,323	6,597
Total Shareholder's Equity	\$11,739	\$9,812
Total Liabilities and Owner's Equity	\$31,510	\$28,825

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 90th 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	
<u>Deductible per Insured per Benefit Year</u>	
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
<u>Annual Maximum per Covered Person</u>	
Annual Maximum per Covered Person	\$1,500
<u>Waiting Period</u>	
Class I and Class II Services	None
Class III Services	12 Months

Exhibit 2 - Dental Network Payment Rates		
	Preferred Provider Rates	Non-Preferred Provider Rates
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

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 rates¹ assumed for males in the LTD plans with 3 month elimination period and 6 month elimination period respectively.

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

¹ 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)									
Duration of Disablement	Age at 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

Exhibit 2b - Death & Recovery - Males (6-month elimination period)									
Duration of Disablement	Age at 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		
Benefit Level	Elimination Period (Months)	Benefit Period (Years)
1	3	2
2	6	5
3	12	Lifetime

Exhibit 4 - Policy Data						
Policy #	Annualized Premium	Benefit Period	Elimination 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

Exhibit 5 - Claim Costs per \$100 Daily Benefit						
Attained Age	Benefit Level 1 - Male	Benefit Level 1 - Female	Benefit Level 2 - Male	Benefit Level 2 - Female	Benefit Level 3 - Male	Benefit Level 3 - Female
<40	58.40	73.00	121.67	165.91	243.34	663.64
41	59.57	73.73	124.10	167.57	244.56	670.28
42	60.76	74.47	126.58	169.25	245.78	676.98
43	61.98	75.21	129.13	170.93	247.01	683.75
44	63.22	75.96	131.71	172.64	248.25	690.59
45	64.48	76.72	134.33	174.36	249.49	697.50
46	65.77	77.49	137.02	176.11	250.74	704.48
47	67.09	78.26	139.77	177.86	251.99	711.52
48	68.43	79.04	142.56	179.64	253.25	718.64
49	69.80	79.83	145.42	181.43	254.52	725.83
50	71.20	80.63	148.33	183.25	255.79	733.09
51	72.62	81.44	151.29	185.09	257.07	740.42
52	74.07	82.25	154.31	186.93	258.36	747.82
53	75.55	83.07	157.40	188.80	259.65	755.30
54	77.06	83.90	160.54	190.68	260.95	762.85
55	78.60	84.74	163.75	192.59	262.25	770.48
56	80.17	85.59	167.02	194.52	267.23	778.18
57	81.77	86.45	170.35	196.48	272.56	785.96
58	83.41	87.31	173.77	198.43	278.03	793.82
59	85.08	88.18	177.25	200.41	283.60	801.76
60	89.33	89.94	178.66	195.52	285.86	809.78
61	93.80	92.64	187.60	201.39	300.16	817.88
62	98.49	96.35	196.98	209.46	315.17	830.15
63	103.41	100.20	206.82	217.83	330.91	842.60
64	108.58	104.21	217.16	226.54	347.46	855.24
65	119.44	109.42	229.69	237.87	356.02	868.07
66	137.36	114.89	264.15	249.76	409.43	885.43
67	164.83	132.12	305.24	287.22	473.12	903.14
68	206.04	151.94	381.56	330.30	591.42	921.20
69	267.85	174.73	496.02	379.85	768.83	944.23
70	361.60	200.94	645.71	436.83	968.57	967.84
71	488.16	231.08	871.71	481.42	1,307.57	992.04
72	659.02	265.74	1,176.82	553.63	1,765.23	1,016.84
73	889.68	318.89	1,533.93	664.35	2,300.90	1,042.26
74	1,156.58	398.61	1,994.10	830.44	2,991.15	1,328.70
75	1,503.55	518.19	2,505.92	1,079.56	3,633.58	1,727.30
76	1,879.44	699.56	3,132.40	1,399.12	4,541.98	2,238.59
77	2,255.33	944.41	3,758.88	1,888.82	5,199.28	3,022.11
78	2,593.63	1,274.95	4,183.27	2,549.90	5,856.58	3,952.35
79	2,852.99	1,657.44	4,457.80	3,314.88	6,240.92	5,138.06
80	2,995.64	2,154.67	4,538.85	4,309.34	6,242.76	6,679.48

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 Claim Rate per \$1,000 of 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.

Moonraker offers a group disability for all its employees.

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

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			
Sex	Age	# Full Time Employees	Average 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
M	<25	47	31,000
M	25-29	237	45,000
M	30-34	1,068	56,000
M	35-39	1,425	63,500
M	40-44	1,900	71,000
M	45-49	1,425	76,000
M	50-54	593	82,000
M	55-59	356	89,000
M	60-64	20	98,000
Total		11,875	

Exhibit 3 - Medical Benefits			
	<u>PPO</u>		<u>HDHP</u>
	<i>In-Network</i>	<i>Out-of-Network</i>	<i>Benefits</i>
Annual Deductible Deductible does not apply to services denoted 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 Routine outpatient prenatal and postpartum visits	Covered in Full *	Covered in Full *	Covered in Full *
Chiropractic/Manipulative Therapy 10 visits per calendar year	10% coinsurance	30% coinsurance	0% coinsurance after deductible
Acupuncture 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
Skilled Nursing 60 days per calendar year	10% coinsurance	30% coinsurance	0% coinsurance after deductible \$10,000 Calendar Year Maximum
Adult Vision 1 routine exam per year; annual hardware allowance	\$10 primary/ \$10 specialty copay per visit \$100 toward glasses or contact lenses*	\$10 primary/ \$10 specialty copay per visit \$100 toward glasses or contact lenses*	\$20 primary/ \$20 specialty copay per visit \$100 toward glasses or contact lenses*
Pediatric Vision 1 routine exam per year; Hardware - 1 paid of lenses and frames or contacts per year	Covered in Full *	Covered in Full *	Covered in Full *
Pediatric Dental Preventative and restorative services	Preventative services covered in full * Other services subject to dental deductible and coinsurance	Preventative services covered in full * Other services subject to dental deductible and coinsurance	Preventative services covered in full * Other services subject to dental deductible and coinsurance
Prescription Drugs Cost per 30-day supply	Filed at pharmacy: \$10 preferred generic*; 20% preferred brand* including specialty brand* Filed by mail order: \$5 preferred generic*; 15% preferred brand* including specialty brand*	Filed at pharmacy: 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)

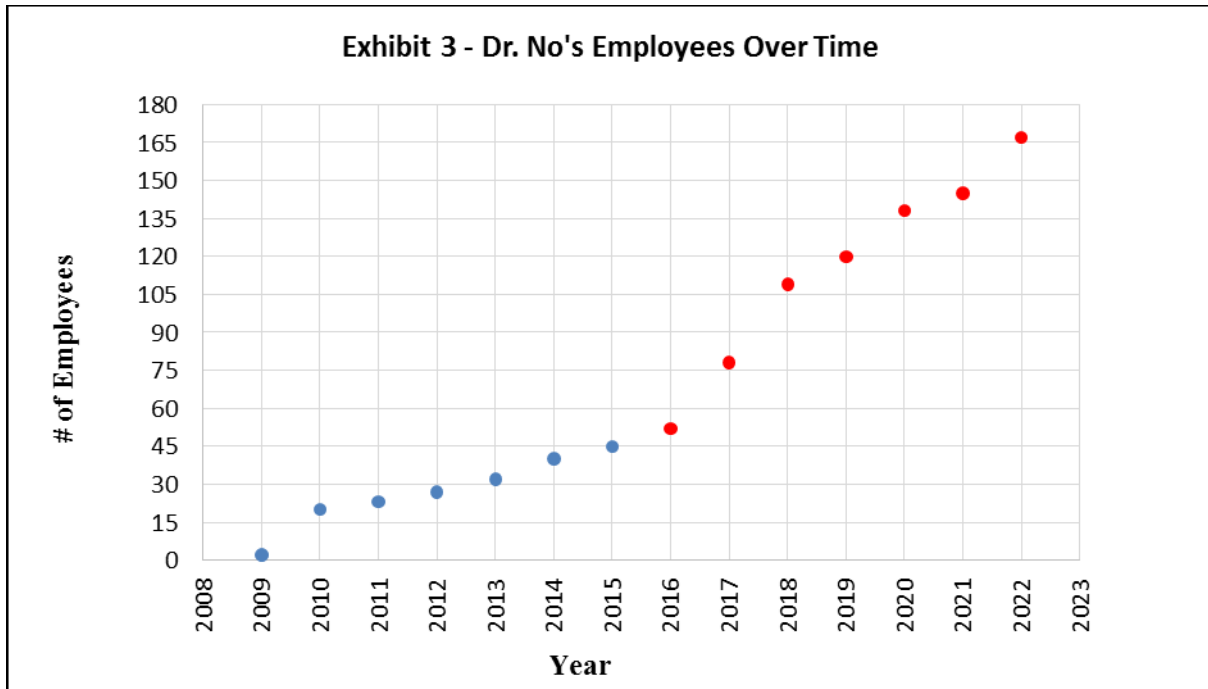
Dr. No’s Herbal Tea is a startup firm, co-founded by Dr. No and Dr. Honey in 2009. Dr. No’s currently employs 45 non-union employees. Due to the increasing popularity of its organic spiced herbal tea products, Dr. No’s has plans to significantly increase its employee size in the next several years to 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 + Spouse	EE + Children	Family
\$351	\$705	\$452	\$857

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

Exhibit 2 - Census			
Sex	Age	# of Employees	Annual 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
M	<25	1	\$22,000
M	25-29	0	N/A
M	30-34	5	\$33,000
M	35-39	6	\$37,000
M	40-44	6	\$46,750
M	45-49	1	\$55,400
M	50-54	2	\$67,600
M	55-59	1	\$78,250
M	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:

Exhibit 1:

Benefit	Coverage Level	Monthly 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
Short Term Disability	75% of weekly salary up to \$1,000 Taxable Plan, 26 week benefit period	\$0.660 per \$10
Long Term Disability	66.67% of monthly salary up to \$5,000 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	
- 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 Credit carryforward provision	Paid as incurred

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:

Benefit	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.

Exhibit 3:

Active Data						
Employee Information				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)	Years Since 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)	\$ 977,000	\$ 1,512,000	\$ 2,286,000
Total Pooled Claims	\$ 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	\$ 427,000	\$ 457,000	\$ 507,000
- 65 and Over	\$ 77,000	\$ 88,000	\$ 113,000
Total Pooled Claims			
- Under 65	\$ 12,000	\$ 43,000	\$ 35,000
- 65 and Over	\$ -	\$ -	\$ 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.