



Case Study

SPRING 2019

Group & Health Core, Canada Exam

EXAM GHCORC

Exam – Group & Health, Core Canada

Case Study

Spring 2019

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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

Living Daylights Life and Health Insurance Company (Living Daylights)

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 2016				
\$ paid claims	Basic	Enhanced 1	Enhanced 2	Enhanced 3
# of claims				
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						
	2014-2015		2015-2016		2016-2017	
	Utilization	Unit Cost	Utilization	Unit Cost	Utilization	Unit Cost
Prescription Drug	5.0%	2.0%	4.1%	3.9%	1.2%	2.4%
Coverage						
Hospital Room	6.7%	3.5%	6.3%	-0.6%	3.5%	2.1%
Paramedical	5.1%	2.4%	4.2%	3.7%	4.0%	3.9%
Coverage						
Emergency Out of	3.1%	4.7%	2.7%	1.1%	1.6%	1.8%
Country Coverage						
Vision	3.2%	1.9%	2.9%	1.2%	3.0%	1.5%
Coverage						
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 (In thousands)			Income Statement For the Years Ending December 31,
Revenue		2016	2015
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, 2016	December 31, 2015	
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 and Shareholder's Equity			
Liabilities			
Current Liabilities			
Policy Liabilities:			
Claims Payable	\$1,232	\$1,354	
Reserves for future policy benefits	2,082	2,180	
Total Policy Liabilities	\$3,314	\$3,534	
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	
Total Current Liabilities	\$9,874	\$9,732	
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)

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)

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)

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 2016, 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)

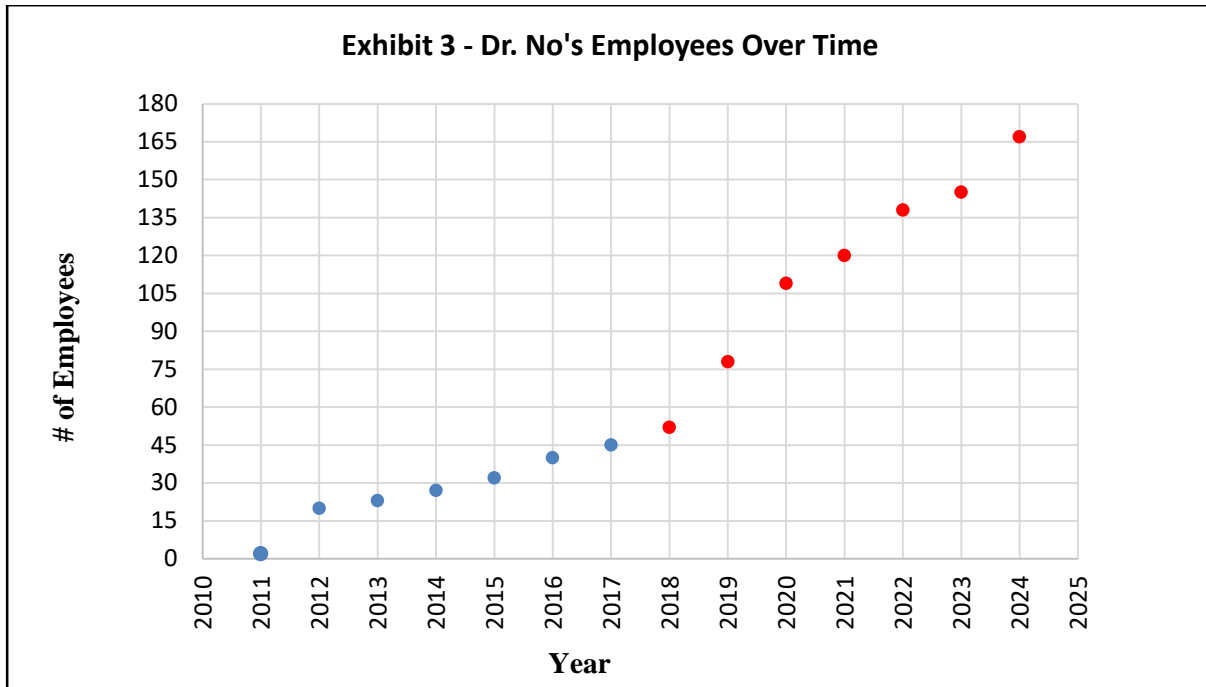
Dr. No's Herbal Tea is a startup firm, co-founded by Dr. No and Dr. Honey in 2009. Dr. No's currently employs 45 non-union employees. Due to the increasing popularity of its organic spiced herbal tea products, Dr. No's has plans to significantly increase its employee size in the next several years to 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 2013. Dr. No's provides all employees with a subsidy of \$100 PMPM towards the 2016 health insurance premium shown below:

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

The 2016 census and projected number of employees in 2017-2024 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 2014 to 2016 can be found in Exhibit 5 below:

Exhibit 5: Extended Health Care Claims Experience

Active Claims Experience

Calendar Year	2014	2015	2016
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

Premium rates have been held unchanged over the past three years.

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) per covered individual.

Retiree Claims Experience

Calendar Year	2014	2015	2016
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

Premium rates have been held unchanged over the past three years.

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) 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.