



# Case Study

**SPRING 2020**

Group & Health Finance & Valuation,  
US & Canada Exams

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## Case Study – Group & Health Finance & Valuation Exam

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### 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. The firm employs several actuarial students, who 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.

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.

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.

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.

## Skyfall's Clients

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

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 selling individual and small group health insurance products in most states in the US. Quantum offers various benefit plan design structures; some of which are compliant with the Affordable Care Act (ACA). The products are sold through brokers and agents.

Quantum offers several types of major medical plans, such as HMOs, PPOs, and High Deductible Health Plans (HDHP), and some are still available for new business, while others are not. The closed block (no longer actively sold) is called Quantum Legacy III. The products that are actively being sold are the HMO and PPO products that are ACA-compliant.

Skyfall has been the opining actuary for Quantum and has been calculating the reserves for all blocks of business. The following exhibits are various tables used in the last reserve calculation exercise. The Company provided the paid claims data incurred between July 2018 and December 2019 with paid data through December 2019. These exhibits are various steps in the reserve calculation process.

Exhibit 1 - Monthly Claims Experience																				
Quantum Legacy III - Individual																				
Incurred Month		Paid Month																		Total
		Jul-2018	Aug-2018	Sep-2018	Oct-2018	Nov-2018	Dec-2018	Jan-2019	Feb-2019	Mar-2019	Apr-2019	May-2019	Jun-2019	Jul-2019	Aug-2019	Sep-2019	Oct-2019	Nov-2019	Dec-2019	
	Jul-2018	31,000	725,000	590,000	217,000	152,000	38,000	23,000	20,000	24,000	11,000	10,000	2,000	0	0	0	0	0	0	1,843,000
	Aug-2018	0	54,000	652,000	749,000	246,000	80,000	17,000	16,000	12,000	19,000	14,000	7,000	5,000	0	0	0	0	0	1,871,000
	Sep-2018	0	0	56,000	763,000	965,000	338,000	74,000	33,000	34,000	14,000	9,000	3,000	4,000	5,000	0	0	0	0	2,298,000
	Oct-2018	0	0	0	44,000	755,000	920,000	287,000	31,000	61,000	44,000	12,000	3,000	2,000	8,000	18,000	0	0	0	2,185,000
	Nov-2018	0	0	0	0	43,000	844,000	1,035,000	214,000	160,000	67,000	14,000	19,000	9,000	19,000	8,000	4,000	0	0	2,436,000
	Dec-2018	0	0	0	0	0	47,000	725,000	668,000	216,000	75,000	16,000	11,000	1,000	5,000	5,000	11,000	2,000	0	1,782,000
	Jan-2019	0	0	0	0	0	0	31,000	625,000	591,000	258,000	290,000	23,000	8,000	7,000	39,000	6,000	1,000	9,000	1,888,000
	Feb-2019	0	0	0	0	0	0	0	19,000	483,000	398,000	97,000	42,000	15,000	16,000	46,000	9,000	1,000	5,000	1,131,000
	Mar-2019	0	0	0	0	0	0	0	0	19,000	810,000	521,000	156,000	50,000	15,000	16,000	33,000	2,000	7,000	1,629,000
	Apr-2019	0	0	0	0	0	0	0	0	0	34,000	367,000	383,000	226,000	137,000	29,000	50,000	13,000	13,000	1,252,000
	May-2019	0	0	0	0	0	0	0	0	0	23,000	432,000	432,000	405,000	133,000	32,000	17,000	15,000	0	1,489,000
	Jun-2019	0	0	0	0	0	0	0	0	0	0	29,000	306,000	306,000	306,000	338,000	138,000	188,000	16,000	1,321,000
	Jul-2019	0	0	0	0	0	0	0	0	0	0	0	43,000	349,000	375,000	283,000	76,000	40,000	0	1,166,000
	Aug-2019	0	0	0	0	0	0	0	0	0	0	0	0	42,000	451,000	453,000	200,000	84,000	0	1,230,000
	Sep-2019	0	0	0	0	0	0	0	0	0	0	0	0	0	73,000	527,000	568,000	232,000	0	1,400,000
	Oct-2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37,000	383,000	560,000	0	980,000
	Nov-2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66,000	803,000	0	869,000
	Dec-2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	499,000	499,000
	Total	31,000	779,000	1,298,000	1,773,000	2,161,000	2,267,000	2,192,000	1,626,000	1,600,000	1,730,000	1,373,000	1,110,000	1,101,000	1,314,000	1,531,000	1,583,000	1,517,000	2,283,000	27,269,000

Exhibit 1 (con't) - Monthly Claims Experience																				
HMO - Individual (ACA-Compliant)																				
Incurred Month		Paid Month																		Total
		Jul-2018	Aug-2018	Sep-2018	Oct-2018	Nov-2018	Dec-2018	Jan-2019	Feb-2019	Mar-2019	Apr-2019	May-2019	Jun-2019	Jul-2019	Aug-2019	Sep-2019	Oct-2019	Nov-2019	Dec-2019	
	Jul-2018	14,000	321,000	299,000	102,000	49,000	19,000	9,000	321,000	9,000	6,000	14,000	1,000	0	0	0	0	0	0	848,000
	Aug-2018	0	32,000	427,000	364,000	177,000	50,000	15,000	12,000	7,000	15,000	13,000	3,000	1,000	0	0	0	0	0	1,116,000
	Sep-2018	0	0	21,000	276,000	389,000	128,000	30,000	14,000	9,000	6,000	4,000	1,000	5,000	0	0	0	0	0	887,000
	Oct-2018	0	0	0	13,000	240,000	301,000	94,000	9,000	23,000	16,000	6,000	1,000	1,000	3,000	4,000	0	0	0	711,000
	Nov-2018	0	0	0	0	14,000	312,000	354,000	67,000	74,000	27,000	6,000	7,000	4,000	11,000	5,000	2,000	0	0	883,000
	Dec-2018	0	0	0	0	0	17,000	331,000	312,000	100,000	17,000	7,000	5,000	3,000	1,000	4,000	7,000	1,000	0	805,000
	Jan-2019	0	0	0	0	0	0	14,000	304,000	295,000	125,000	162,000	11,000	3,000	4,000	21,000	4,000	1,000	5,000	949,000
	Feb-2019	0	0	0	0	0	0	0	13,000	297,000	277,000	67,000	15,000	7,000	3,000	9,000	10,000	1,000	4,000	703,000
	Mar-2019	0	0	0	0	0	0	0	0	11,000	450,000	292,000	84,000	25,000	7,000	6,000	14,000	8,000	3,000	900,000
	Apr-2019	0	0	0	0	0	0	0	0	0	18,000	220,000	244,000	151,000	113,000	16,000	33,000	16,000	10,000	821,000
	May-2019	0	0	0	0	0	0	0	0	0	0	13,000	241,000	250,000	254,000	72,000	12,000	11,000	10,000	863,000
	Jun-2019	0	0	0	0	0	0	0	0	0	0	0	19,000	183,000	213,000	237,000	103,000	140,000	8,000	903,000
	Jul-2019	0	0	0	0	0	0	0	0	0	0	0	0	28,000	246,000	280,000	208,000	58,000	28,000	848,000
	Aug-2019	0	0	0	0	0	0	0	0	0	0	0	0	0	27,000	317,000	346,000	151,000	49,000	890,000
	Sep-2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41,000	324,000	352,000	153,000	870,000
	Oct-2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18,000	205,000	339,000	562,000
	Nov-2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70,000	882,000	952,000
	Dec-2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	470,000	470,000
	Total	14,000	353,000	747,000	755,000	869,000	827,000	847,000	740,000	822,000	956,000	804,000	635,000	657,000	887,000	1,012,000	1,081,000	1,014,000	1,961,000	14,981,000

<b>Exhibit 2 - Monthly Claims Experience</b>				
<b>PPO - Individual (ACA-Compliant)</b>				
		Paid Claims		Paid
		Through Dec 2019	Enrollment	PMPM
<b>Incurred Month</b>	Jul-2018	409,000	1,980	206.57
	Aug-2018	491,000	1,980	247.98
	Sep-2018	382,000	1,860	205.38
	Oct-2018	294,000	1,620	181.48
	Nov-2018	362,000	1,620	223.46
	Dec-2018	347,000	1,620	214.20
	Jan-2019	403,000	1,620	248.77
	Feb-2019	289,000	2,040	141.67
	Mar-2019	371,000	2,100	176.67
	Apr-2019	357,000	2,040	175.00
	May-2019	370,000	2,040	181.37
	Jun-2019	400,000	2,100	190.48
	Jul-2019	371,000	2,100	176.67
Aug-2019	395,000	2,100	188.10	
Sep-2019	376,000	2,280	164.91	
Oct-2019	246,000	2,280	107.89	
Nov-2019	203,000	2,400	84.58	
Dec-2019	102,000	2,640	38.64	
	<b>Total</b>	<b>6,168,000</b>		

<b>Exhibit 3 - Enrollment - Individual</b>			
Month	Quantum Legacy III	HMO (ACA - Compliant)	PPO (ACA - Compliant)
Jul-2018	11,100	4,000	1,980
Aug-2018	11,700	3,800	1,980
Sep-2018	11,400	3,750	1,860
Oct-2018	11,400	3,750	1,620
Nov-2018	11,400	3,750	1,620
Dec-2018	11,400	4,050	1,620
Jan-2019	11,800	4,100	1,620
Feb-2019	11,800	4,050	2,040
Mar-2019	12,000	4,100	2,100
Apr-2019	12,000	4,150	2,040
May-2019	12,700	4,200	2,040
Jun-2019	12,700	4,150	2,100
Jul-2019	11,700	4,450	2,100
Aug-2019	11,900	4,450	2,100
Sep-2019	12,100	4,600	2,280
Oct-2019	12,300	4,850	2,280
Nov-2019	12,300	4,850	2,400
Dec-2019	12,500	4,600	2,640

Exhibit 4 - Percent of Ultimate Losses by Lag Month													
Quantum Legacy III - Small Group													
		Lag Month											
		1	2	3	4	5	6	7	8	9	10	11	12
Incurred Month	Jul-18	0.016	0.465	0.694	0.804	0.910	0.924	0.934	0.944	0.963	0.969	0.999	1.000
	Aug-18	0.036	0.356	0.835	0.922	0.953	0.964	0.969	0.977	0.977	0.993	0.998	1.000
	Sep-18	0.026	0.447	0.783	0.879	0.916	0.933	0.966	0.973	0.979	0.989	0.992	1.000
	Oct-18	0.029	0.445	0.790	0.959	0.946	0.957	0.971	0.980	0.982	0.986	0.993	1.000
	Nov-18	0.029	0.397	0.856	0.904	0.948	0.962	0.966	0.975	0.980	0.985	0.994	1.000
	Dec-18	0.041	0.451	0.739	0.880	0.957	0.967	0.971	0.974	0.980	0.989	0.999	1.000
	Jan-19	0.027	0.416	0.711	0.836	0.947	0.964	0.970	0.979	0.990	0.994	0.994	1.000
	Feb-19	0.017	0.422	0.758	0.809	0.865	0.880	0.911	0.988	0.998	0.999	1.000	
	Mar-19	0.006	0.483	0.739	0.876	0.905	0.920	0.946	0.973	0.997	1.000		
	Apr-19	0.040	0.411	0.592	0.755	0.923	0.948	0.980	0.998	1.000			
May-19	0.030	0.413	0.705	0.865	0.970	0.987	0.993	1.000					

Exhibit 4 (con't) - Percent of Ultimate Losses by Lag Month													
HMO - Small Group (ACA-Compliant)													
		Lag Month											
		1	2	3	4	5	6	7	8	9	10	11	12
Incurred Month	Jul-18	0.017	0.375	0.740	0.862	0.931	0.961	0.973	0.984	0.991	0.998	0.999	1.000
	Aug-18	0.025	0.385	0.727	0.889	0.948	0.959	0.971	0.978	0.995	0.997	0.999	1.000
	Sep-18	0.023	0.306	0.760	0.932	0.966	0.980	0.986	0.992	0.995	0.995	0.999	1.000
	Oct-18	0.019	0.329	0.780	0.891	0.927	0.963	0.986	0.991	0.992	0.993	0.995	1.000
	Nov-18	0.013	0.350	0.763	0.841	0.928	0.967	0.973	0.984	0.987	0.993	0.995	1.000
	Dec-18	0.020	0.426	0.836	0.946	0.973	0.986	0.994	0.993	0.994	0.994	0.999	1.000
	Jan-19	0.012	0.316	0.628	0.768	0.950	0.960	0.964	0.966	0.991	0.994	0.995	1.000
	Feb-19	0.017	0.445	0.797	0.908	0.937	0.950	0.954	0.978	0.991	0.992	1.000	
	Mar-19	0.015	0.517	0.858	0.938	0.967	0.976	0.979	0.995	0.996	1.000		
	Apr-19	0.022	0.275	0.630	0.818	0.896	0.920	0.968	0.985	1.000			
May-19	0.013	0.266	0.558	0.870	0.956	0.971	0.988	1.000					

Exhibit 5 - Age-to-Age Factors												
PPO - Small Group (ACA-Compliant)												
Incurred	Lag Month											
Month	1	2	3	4	5	6	7	8	9	10	11	12
Jul-18	12.039	1.655	1.299	1.090	1.114	1.013	1.004	1.027	1.014	1.116	1.003	-
Aug-18	12.231	2.112	1.199	1.200	1.015	1.013	1.020	1.002	1.026	1.037	1.057	-
Sep-18	23.283	1.894	1.191	1.190	1.020	1.021	1.014	1.011	1.028	1.044	1.037	-
Oct-18	5.845	1.593	1.171	1.183	1.025	1.031	1.013	1.001	1.014	1.070	1.078	-
Nov-18	11.674	2.469	1.806	1.033	1.086	1.004	1.050	1.001	1.109	1.026	1.071	-
Dec-18	12.605	1.516	1.163	1.117	1.093	1.022	1.002	1.004	1.032	1.056	1.005	-
Jan-19	14.917	1.581	1.121	1.240	1.022	1.004	1.031	1.025	1.026	1.019	1.048	-
Feb-19	17.920	1.936	1.173	1.115	1.014	1.022	1.124	1.029	1.024	1.031	-	-
Mar-19	42.812	1.940	1.152	1.011	1.017	1.004	1.005	1.009	1.005	-	-	-
Apr-19	7.140	2.985	1.104	1.174	1.021	1.031	1.009	1.008	-	-	-	-
May-19	5.167	1.936	1.301	1.106	1.258	1.046	1.009	-	-	-	-	-



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

From: Dominic Greene <DGreene@quantum.com>  
To: You <JB007@Skyfall.com>  
Sent: April 20, 2020  
Subject: 2019 YE Financial Statements

We have finished our financial statements. I have enclosed several of the key pages.  
Let me know if you have any questions.

Dominic

Enclosures:

<b>Exhibit 6 - Financial Statements</b>			
Income Statement			
(In thousands)		For the Years Ending December 31,	
<b>Revenue</b>		<b>2019</b>	<b>2018</b>
Premiums		85,128	94,429
Individual HMO		22,637	18,257
Individual PPO		6,407	5,377
Individual Grandfathered		18,780	32,298
<i>Total Individual</i>		47,823	55,932
Small Group HMO		14,860	11,750
Small Group PPO		7,699	6,013
Small Group Grandfathered		14,747	20,734
<i>Total Small Group</i>		37,305	38,497
Administrative fees Income		32	22
Miscellaneous income		1,703	1,889
<i>Total operating revenue</i>		86,863	96,340
Net investment income		1,340	1,079
<b>Total Revenues</b>		<b>\$ 88,203</b>	<b>\$ 97,419</b>
<b>Expenses</b>			
Benefit expense		71,916	76,845
Individual HMO		19,500	14,372
Individual PPO		5,574	4,799
Individual Grandfathered		15,860	25,950
<i>Total Individual</i>		40,934	45,120
Small Group HMO		11,363	9,354
Small Group PPO		6,164	4,820
Small Group Grandfathered		13,455	17,551
<i>Total Small Group</i>		30,983	31,725
Commissions		1,541	757
General insurance expenses		9,534	10,293
Insurance taxes, licenses, and fees, excluding federal income tax		1,703	1,889
Write-in		752	576
<b>Total expenses</b>		<b>\$ 85,446</b>	<b>\$ 90,359</b>
Income before income tax expense		2,757	7,059
Income tax expense		937	2,400
<b>Net Income</b>		<b>\$ 1,820</b>	<b>\$ 4,659</b>

<b>Exhibit 6 (continued) - Financial Statements</b>		
Balance Sheet		
<i>(In thousands)</i>		
<b>Assets</b>	<b>December 31, 2019</b>	<b>December 31, 2018</b>
<b>Current Assets</b>		
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
<b>Total Assets</b>	<b>\$ 40,291</b>	<b>\$ 40,002</b>
<b>Liabilities and Shareholder's Equity</b>		
<b>Liabilities</b>		
<b>Current Liabilities:</b>		
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
<b>Total Liabilities</b>	<b>19,772</b>	<b>20,141</b>
<b>Shareholder's Equity</b>		
Common capital stock	6,500	6,500
Retained earnings	13,597	12,951
Unassigned funds (surplus)	422	410
<b>Total Shareholder's Equity</b>	<b>20,519</b>	<b>19,861</b>
<b>Total Liabilities and Owner's Equity</b>	<b>\$ 40,291</b>	<b>\$ 40,002</b>

## **Casino Royale Health & Life Insurance Company (Royale Health)**

### **Large Group Products/Administrative Services Only**

Royale Health, incorporated in 1980, offers coverage options for large group employers, including fully insured options and administrative services only (ASO) options. Health coverage plan options offered by Royale Health include medical and prescription plans, which are marketed primarily through agents and brokers. Royale Health has been successful in establishing its own preferred provider networks in the Midwestern states and has the second largest market share in the large group market of the Midwest Region. The medical plan portfolio includes PPO plans and qualified high deductible health plans (HDHP), which can be combined with a Health Savings Account (HSA). Royale Health also administers Health Reimbursement Arrangements (HRA) offered by employers. Royale Health's Board has expressed interest in expanding the company into new product markets. Royale Health has recently participated in preliminary discussions with a Canadian company, Pinewood Insurance Company about a potential merger.

**\*\*Royale Health Email 1\*\***

From: Le Chiffre <lechiffre@RoyaleHealth.com>  
To: You <JB007@Skyfall.com>  
Sent: March 9, 2020  
Subject: Potential Merger

I have been approached by the CEO of Pinewood Insurance Company (Pinewood), located in Canada, for a possible merger. They are interested in expanding into the U.S., and we could gain from their product expertise. While we do have some overlap in product offerings, Pinewood has experience in some additional markets that we have no experience with.

As you can imagine, this potential merger is highly confidential. As we begin to explore this opportunity, I would like your help through the due diligence and, if necessary, negotiations of this possible merger. I have attached Pinewood's financial information for your review. To provide you with some background, I have also summarized below some of the information on Pinewood that I have thus far:

Pinewood is a large insurance company operating exclusively in Canada. Its corporate vision is similar to ours: to be a leader in the insurance industry, to earn a competitive return for its stockholders, to offer good value to its policyholders while operating in a financially sustainable way, and to attract and retain valuable employees.

Pinewood's primary product offerings include:

- Supplemental medical benefits.
- Group life,
- Disability insurance, and
- Ancillary products, including dental and vision.

Pinewood employs 2,000 people throughout Canada. From what I've gathered so far, Pinewood seems to have a strong reputation in their markets. However, they are interested in growing into other markets and possibly internationally.

I have attached Pinewood's financial information for your review. Please let me know what additional information you think we should seek out.

Thanks,  
Le Chiffre

<b>Exhibit 1 - 2019 Annual Report</b>			
<b>Pinewood Insurance Company</b>		<b>Consolidated Statement of Operations</b>	
(In thousands, except per share data)		For the Years Ending December 31,	
<b>Revenue</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
Premium Income			
Supplemental Medical	4,023	3,784	3,129
Group Life	5,888	6,071	6,211
Disability	2,572	3,420	5,280
Ancillary Products	1,234	967	957
Administrative fees Income	2,553	3,118	3,011
Other revenue	-	-	-
<b>Total operating revenue</b>	<b>16,270</b>	<b>17,360</b>	<b>18,588</b>
Net investment income	3,178	5,348	5,707
Net realized gains (losses) on investments	-	-	-
<b>Total Revenues</b>	<b>\$19,448</b>	<b>\$22,708</b>	<b>\$24,295</b>
<b>Expenses</b>			
Benefit expense			
Supplemental Medical	3,359	3,123	2,583
Group Life	3,592	3,946	3,913
Disability	1,517	2,120	3,326
Ancillary Products	963	725	794
Commissions	1,941	2,233	2,671
General and administrative expense	4,084	4,315	4,859
Premium Taxes	274	285	312
Interest Expense	350	323	345
Amortization of other intangible assets	265	274	260
<b>Total Expenses</b>	<b>\$16,345</b>	<b>\$17,344</b>	<b>\$19,063</b>
Income before income tax expense	3,103	5,364	5,232
Income tax expense	621	1,073	1,046
<b>Net Income</b>	<b>\$2,482</b>	<b>\$4,291</b>	<b>\$4,186</b>

Net income per share

Basic	\$2.66	\$4.33	\$3.73
Diluted	\$2.70	\$4.73	\$3.84

Average Exchange Rates\*

U.S. dollars	0.74	0.76	0.80
Euro	0.69	0.67	0.66

\* e.g., on 12/31/2017, \$1 Can = \$0.80 US

<b>Exhibit 1 - 2019 Annual Report (continued)</b>		
<b>Pinewood Insurance Company</b>	<b>Consolidated Balance Sheet</b>	
(In thousands)		
<b>Assets</b>	<b>December 31, 2019</b>	<b>December 31, 2018</b>
<b>Current Assets</b>		
Cash and cash equivalents	\$9,880	\$8,770
Premium Receivables	8	8
Investments available-for-sale, at fair value		
Fixed maturity securities (amortized cost)	1,169	1,097
Equity securities	256	242
Other invested assets, current	693	722
Other receivables	827	745
Income taxes receivable	53	54
Net due from subsidiaries	867	1,197
Securities lending collateral	583	854
Deferred tax assets, net	250	248
Other current assets	1	1
<b>Total Current Assets</b>	<b>\$14,587</b>	<b>\$13,938</b>
<b>Long-term investments</b>		
Fixed maturity securities	\$534	\$234
Equity securities	\$6	\$7
Other invested assets, long-term	\$456	\$495
Property and equipment, net	4	3
Deferred tax assets, net, non-current	234	227
Investment in subsidiaries	5,544	3,456
Other noncurrent assets	114	37
<b>Total Assets</b>	<b>\$21,479</b>	<b>\$18,397</b>
<b>Liabilities and Shareholder's Equity</b>	<b>December 31, 2019</b>	<b>December 31, 2018</b>
<b>Liabilities</b>		
Actuarial and Policy Liabilities	\$8,230	\$7,564
Amounts on deposit	678	876
Deferred Gains	4	5
Long-term debt	345	456
Other Liabilities	795	856
<b>Total Liabilities</b>	<b>\$10,052</b>	<b>\$9,757</b>
<b>Shareholder's Equity</b>		
Preferred stock	0	0
Common stock	5	5
Additional paid-in capital	326	109
Retained earnings	1,865	1,777
Accumulated Income	9,231	6,749
<b>Total Shareholder's Equity</b>	<b>\$11,427</b>	<b>\$8,640</b>
<b>Total Liabilities and Owner's Equity</b>	<b>\$21,479</b>	<b>\$18,397</b>

**\*\*Royale Health Email 2\*\***

From: Le Chiffre <lechiffre@RoyaleHealth.com>  
To: You <JB007@Skyfall.com>  
Sent: March 17, 2020  
Subject: Royale Health Financial Information

Hi – I have attached our latest financial information for this past year. Also of note, Royale Health had 444,902,956 common/preferred shares outstanding at YE2019. Our current tax rate is 21.0%.

Please let me know if you need anything else or need help finding anything.

Thanks,  
Le Chiffre



<b>Exhibit 2 - Financial Statements</b>		
<b>Royale Life Insurance Company</b>		<b>Income Statement</b>
(In thousands)		For the Years Ending December 31,
<b>Revenue</b>	<b>2019</b>	<b>2018</b>
Premiums	\$66,599	\$57,686
Administrative fees Income	5,050	4,152
Other revenue	45	79
<i>Total operating revenue</i>	<i>71,694</i>	<i>61,917</i>
Net investment income	749	755
Net realized gains (losses) on investments	321	423
<b>Total Revenues</b>	<b>\$72,764</b>	<b>\$63,095</b>
<b>Expenses</b>		
Benefit expense	\$57,230	\$49,252
Commissions	1,541	1,591
General and administrative expense	9,246	8,143
Premium Taxes	1,332	1,154
Interest Expense	752	598
Amortization of other intangible assets	298	287
<b>Total Expenses</b>	<b>\$70,399</b>	<b>\$61,025</b>
Income before income tax expense	2,365	2,070
Income tax expense	1,251	1,253
<b>Net Income</b>	<b>\$1,114</b>	<b>\$817</b>

<b>Exhibit 2 - Financial Statements (continued)</b>		
<b>Royale Life Insurance Company</b>	<b>Balance Sheet</b>	
(In thousands)		
<b>Assets</b>	<b>December 31, 2019</b>	<b>December 31, 2018</b>
<b>Current Assets</b>		
Cash and cash equivalents	\$1,729	\$2,210
Investments available-for-sale, at fair value		
Fixed maturity securities (amortized cost)	16,950	15,913
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
<b>Total Current Assets</b>	<b>\$28,097</b>	<b>\$27,162</b>
Long-term investments	\$2,102	\$2,055
Net property, plant, and equipment	1,811	1,729
Goodwill	15,971	15,942
Other intangible assets	7,931	7,955
Other noncurrent assets	458	299
<b>Total Assets</b>	<b>\$56,370</b>	<b>\$55,142</b>
<b>Liabilities and Shareholder's Equity</b>	<b>December 31, 2019</b>	<b>December 31, 2018</b>
<b>Liabilities</b>		
<b>Current Liabilities</b>		
Policy Liabilities:		
Medical claims payable	\$6,058	\$6,095
Reserves for future policy benefits	59	55
Other policyholder liabilities	2,023	2,125
<b>Total Policy Liabilities</b>	<b>\$8,140</b>	<b>\$8,275</b>
Unearned Income	811	875
Accounts payable and accrued expenses	3,299	2,975
Short-term borrowings	389	212
Current portion of long-term debt	467	489
Other current liabilities	1,594	1,647
<b>Total Current Liabilities</b>	<b>\$14,700</b>	<b>\$14,473</b>
Long-term debt, less current portion	11,253	12,121
Reserves for future policy benefits, noncurrent	655	661
Deferred tax liabilities, net	2,987	2,857
Other noncurrent liabilities	787	895
<b>Total Liabilities</b>	<b>\$30,382</b>	<b>\$31,007</b>
<b>Shareholder's Equity</b>		
Paid-in capital - Common Stock	\$12,094	\$11,976
Retained earnings	13,513	11,950
Accumulate other comprehensive income	381	209
<b>Total Shareholder's Equity</b>	<b>\$25,988</b>	<b>\$24,135</b>
<b>Total Liabilities and Owner's Equity</b>	<b>\$56,370</b>	<b>\$55,142</b>

## **Goldfinger Insurance Company (GIC)**

### **Medicare Advantage/Part D**

Goldfinger Insurance Company provides Medicare Advantage Plans and Part D Plans (MAPD), Medicaid and CHIP plans to the applicable target groups. GIC is domiciled in Fort Knox, Kentucky. The only MAPD offering is a Dual-Eligible Special Needs Plan (SNP). Total membership in the MAPD program is roughly 50,000 members. Until recently, this product was available only in Kentucky; however, the program was expanded into parts of Tennessee in 2019. Membership in Tennessee is very low and little claims experience is available.

Skyfall provides actuarial support for GIC's Medicare products and aids in product design and bid submission, as necessary. The following are selections from the email correspondence between Goldfinger and Skyfall regarding the latest round of pricing.

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**\*\*Goldfinger Email 1\*\***

From: Jill Masterson <JMasterson@goldfingeric.com>  
To: You <JB007@Skyfall.com>  
Sent: February 25th, 2020  
Subject: Medicare Advantage Cost Sharing

Hello again, we can't thank you enough for performing so many "odd jobs" related to our Medicare Advantage products. You have certainly been essential to our success with the MAPD plan.

Our product development team has proposed waiving the skilled nursing facility (SNF) copay for the first four days and applying it instead to days five through eight. This is more in line with our primary competitor, and they believe it will increase new enrollment. However, I'm a little worried it might be too expensive. Please take a look at that and let us know whether we can make this change without losing too much on the profit side.

I wasn't sure what information you'd need, but I had Auric pull some historical information on the SNF benefit. I attached a summary of our historical experience with SNF length-of-stay, as well as the 2019 experience by benefit. The attached trend tables were published by a respected research group and they might be a good starting point for prospective trend estimates going forward. If you need anything else, don't hesitate to ask.

Thanks again,  
Jill Masterson  
Chief Financial Officer  
Goldfinger Insurance Company

Enclosures:

**Goldfinger Insurance SNF Continuance (MAPD):**

<b>Exhibit 1 - Skilled Nursing Facility</b>	
Length of Stay (Days)	Cumulative Frequency
1	0.10
2	0.17
3	0.23
4	0.28
5	0.33
6	0.36
7	0.38
8	0.40
100	1.00

<b>Exhibit 2 - Medicare Advantage Kentucky - 2019 Experience</b>						
<b>Medical</b>	Utilization Units	Utilization /1000	Unit Cost	Allowed PMPM	Net Paid PMPM	Cost Share PMPM
Inpatient Facility	Days	750	\$6,000	\$375.00	\$360.00	\$15.00
Skilled Nursing Facility	Days	600	\$1,000	\$50.00	\$49.50	\$0.50
Home Health	Visits	200	\$210	\$3.50	\$3.50	\$0.00
Ambulance	Trips	120	\$700	\$7.00	\$6.65	\$0.35
DME/Prosthetics/Supplies	Other	600	\$240	\$12.00	\$10.80	\$1.20
Emergency Room	Visits	300	\$1,200	\$30.00	\$26.10	\$3.90
Outpatient Surgery	Procedures	150	\$3,000	\$37.50	\$33.75	\$3.75
Professional	Visits	6000	\$200	\$100.00	\$97.00	\$3.00
Other Medicare Part B	Other	1000	\$1,500	\$125.00	\$106.25	\$18.75
<b>Total</b>				\$740.00	\$693.55	\$46.45
<b>Prescription</b>		Scripts /1000	Unit Cost	Allowed PMPM	Net Paid PMPM	Cost Share PMPM
Preferred Generic		3000	\$18	\$4.50	\$4.50	\$0.00
Non-Preferred Generic		20000	\$21	\$35.00	\$29.16	\$5.84
Preferred Brand		2600	\$430	\$93.17	\$80.37	\$12.79
Non-Preferred Brand		700	\$510	\$29.75	\$19.93	\$9.82
Specialty		120	\$4,800	\$48.00	\$37.33	\$10.67
<b>Total</b>				\$210.42	\$171.30	\$39.11

Exhibit 3 shows the publicly-available prospective trends for Kentucky and Tennessee.

<b>Exhibit 3 - Medicare Advantage Annual Trend Factors - Kentucky</b>				
Service Category	2019-2020		2020-2021	
	Unit	Utilization/	Unit	Utilization/
	Cost	1000	Cost	1000
Inpatient Hospital	3.00%	-0.50%	1.00%	0.00%
Skilled Nursing and Home Health	1.50%	0.00%	0.25%	0.25%
Outpatient Hospital	2.00%	0.00%	2.00%	0.50%
Physician	0.00%	2.00%	0.50%	3.50%
Other	-1.00%	0.00%	0.50%	1.00%

<b>Exhibit 3 (con't) - Medicare Advantage Annual Trend Factors - Tennessee</b>				
Service Category	2019-2020		2020-2021	
	Unit	Utilization/	Unit	Utilization/
	Cost	1000	Cost	1000
Inpatient Hospital	3.00%	-0.50%	-5.50%	0.00%
Skilled Nursing and Home Health	1.50%	0.00%	-0.50%	0.25%
Outpatient Hospital	2.00%	0.00%	2.00%	0.50%
Physician	0.00%	2.00%	-2.00%	3.50%
Other	-1.00%	0.00%	0.50%	1.00%

<b>Exhibit 4 - Cost Sharing for Goldfinger MAPD Plans</b>			
MA Benefit Category	2019	2020	2021
Deductible	\$200	\$200	\$200
General Coinsurance	20%	20%	20%
Maximum Out-of-Pocket	\$6,500	\$6,500	\$6,000
Inpatient	No cost sharing for first three days, then \$150 copay per day.	No cost sharing for first three days, then \$150 copay per day.	No cost sharing for first three days, then \$150 copay per day.
Skilled Nursing Facility	\$50 copay per day for first five days, no cost sharing afterwards	\$50 copay per day for first five days, no cost sharing afterwards	\$40 copay per day for first four days, no cost sharing afterwards
Home Health Services	No cost sharing	No cost sharing	No cost sharing
Emergency Care Copay	\$75	\$75	\$50
Primary Care Copay	\$30	\$35	\$35
Specialist Copay	\$55	\$50	\$50
Other Medicare-Covered	Deductible/ Coinsurance	Deductible/ Coinsurance	Deductible/ Coinsurance
PD Benefit Category	2019	2020	2021
Annual Deductible	\$275	\$275	\$300
Preferred Generic Rx	\$0 Copay	\$5 Copay	\$0 Copay
Non-Preferred Generic Rx	\$5 Copay	\$7 Copay	\$5 Copay
Preferred Brand Rx	\$45 Copay	\$25 Copay	\$45 Copay
Non-Preferred Brand Rx	30% Coinsurance	30% Coinsurance	30% Coinsurance
Specialty Rx	20% Coinsurance	20% Coinsurance	20% Coinsurance

\*\*Goldfinger Email 2\*\*

From: Jill Masterson <JMasterson@goldfingeric.com>  
 To: You <JB007@Skyfall.com>  
 Sent: March 15, 2020  
 Subject: Dual-Eligible (DE) Inpatient Costs

Hello again! As you know, one important element of our Medicare Advantage bid development pertains to projected population changes. Because different demographics have very different costs, we have to project as accurately as possible the changes in both our revenue and our expenses due to aging, new enrollees, and other factors that represent a change in the demographic mix. The reviewers usually expect detailed documentation of our process, so make sure to keep that in mind as we develop those projections.

Since we are continually expanding, we want to keep a close eye on any major shifts in membership. Auric suggested that maybe our factors for some of those demographic characteristics might be too simplistic and recommended we look at the cost differentials for inpatient costs separately from other costs. He is still working on getting all of the data from the providers across the state, but below is our

admission experience for last year for one of our hospitals. Hopefully this will help you get a head start on projecting changes in cost. I have also included the factors we have used in the past for projected new enrollees, along with enrollment projections from our sales team.

Please start looking at this data, and we'll get you the data from our other providers as soon as possible.

Thanks, Jill

Enclosures:

<b>Exhibit 5 - Goldfinger Inpatient Claims at Fort Knox Hospital, 2019</b>						
Member	Age	Gender	Dual Eligible (DE) Status	Admit Date	Discharge Date	DRG
George	68	Male	DE	8/14/2019	9/5/2019	4
Auric	81	Male	DE	2/7/2019	2/26/2019	7
Auric	81	Male	DE	3/1/2019	3/31/2019	7
Ian	65	Male	Non-DE	4/5/2019	5/5/2019	6
Tilly	71	Female	Non-DE	3/15/2019	4/5/2019	3
Tilly	71	Female	Non-DE	5/4/2019	5/30/2019	1
Tilly	71	Female	Non-DE	10/4/2019	10/19/2019	1
Q	66	Male	DE	11/27/2019	11/28/2019	5
Olivia	70	Female	Non-DE	6/6/2019	6/12/2019	5
Moneypenny	91	Female	Non-DE	6/7/2019	6/27/2019	2
Felix	68	Male	Non-DE	8/23/2019	8/30/2019	4
Bonita	74	Female	Non-DE	9/2/2019	9/11/2019	3
Shirley	66	Female	DE	4/4/2019	4/13/2019	1

<b>Exhibit 6 - Regional Factors</b>			
		2019 MAPD	2020 MAPD
Region	Factor	Members	Members
North	1.09	15,124	17,145
East	0.98	16,745	15,977
South	1.05	8,235	10,542
West	0.82	7,896	7,336

<b>Exhibit 7 - Age Factors</b>			
		2019 MAPD	2020 MAPD
Age	Factor	Members	Members
Under 70	0.93	24,804	31,524
70 to 74	1.04	15,331	14,112
75 to 79	1.08	4,450	4,852
80+	1.22	3,415	512

<b>Exhibit 8 - Gender Factors</b>			
		2019 MAPD	2020 MAPD
Gender	Factor	Members	Members
Male	1.03	20,546	21,213
Female	0.98	27,454	29,787

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### **Medicaid**

GIC also participates in a Financial Alignment Demonstration contract with Kentucky and CMS, which began on July 1<sup>st</sup>, 2019. This demonstration will be carried out under the Capitated Model. The target population of the demonstration is limited to dual-eligible beneficiaries over the age of 80. As a result, the per-member per-month (PMPM) costs for the demonstration members are expected to be materially higher than average for the MAPD plan. The primary source of enrollment is pre-existing Goldfinger members. The majority of Goldfinger's members over the age of 80 have elected to participate in the demonstration due to its more generous benefits. Skyfall was asked to assist in the calculation of prospective capitation payments over the life of the demonstration. The past two years of income statements and balance sheets for GIC is provided below:



<b>Exhibit 9 - Financial Statements</b>			
<b>Goldfinger Insurance Company (GIC) - Income Statement</b>			
(In thousands)		For the Years Ending December 31,	
<b>Revenue</b>		<b>2019</b>	<b>2018</b>
	Premiums	\$196,810	\$141,687
	Medicare Advantage	173,412	134,876
	Medicare Part D	10,620	6,811
	<i>Total MAPD</i>	<i>\$184,032</i>	<i>\$141,687</i>
	Dual-Eligible Demonstration	12,778	-
	<i>Total operating revenue</i>	<i>\$196,810</i>	<i>\$141,687</i>
	Net investment income	6,273	5,269
	<b>Total Revenues</b>	<b>\$203,083</b>	<b>\$146,956</b>
<b>Expenses</b>			
	Benefit expense	\$168,112	\$119,367
	Medicare Advantage	149,481	113,476
	Medicare Part D	9,027	5,891
	<i>Total MAPD</i>	<i>\$158,508</i>	<i>\$119,367</i>
	Total Dual-Eligible Demonstration	9,604	-
	Commissions	3,543	2,210
	General administrative expense	17,786	14,693
	Premium Taxes	3,787	2,914
	Interest Expense	961	1,095
	Amortization of other intangible assets	311	300
	<b>Total expenses</b>	<b>\$194,500</b>	<b>\$140,579</b>
	Income before income tax expense	8,583	6,377
	Income tax expense	3,090	2,296
	<b>Net Income</b>	<b>\$5,493</b>	<b>\$4,081</b>

<b>Exhibit 9 (con't) - Financial Statements</b>		
<b>Goldfinger Insurance Company (GIC) - Balance Sheet</b>		
<i>(In thousands)</i>		
<b>Assets</b>	<b>December 31, 2019</b>	<b>December 31, 2018</b>
Current Assets	\$82,982	\$86,983
Long-term investments	9,524	6,165
Net property, plant, and equipment	4,865	5,187
Net Intangible Assets	31,969	27,109
<b>Total Assets</b>	<b>\$129,340</b>	<b>\$125,444</b>
<b>Liabilities and Shareholder's Equity</b>		
<b>Liabilities</b>		
Policy liabilities:		
Claims unpaid	\$16,965	\$17,066
Reserves for future policy benefits	321	154
Other policyholder liabilities	4,789	5,746
<i>Total policy liabilities</i>	<i>\$22,075</i>	<i>\$22,966</i>
Unearned Premium	3,456	2,651
Premiums received in advance	18,014	14,904
Long-term debt	29,785	33,938
Reserves for future policy benefits, noncurrent	345	290
Deferred tax liabilities, net	3,129	4,524
Payable for securities	2,203	2,506
<b>Total Liabilities</b>	<b>\$56,932</b>	<b>\$58,813</b>
<b>Shareholder's Equity</b>		
Common capital stock	\$25,521	\$20,945
Retained earnings	46,887	45,686
<b>Total Shareholder's Equity</b>	<b>\$72,408</b>	<b>\$66,631</b>
<b>Total Liabilities and Owner's Equity</b>	<b>\$129,340</b>	<b>\$125,444</b>

## **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. The following tables show the reserve factors for various ages and durations. Tables 1 & 2 are the newest tables created by the internal team, and Tables 3 & 4 are the tables that have been used for many years.

Exhibit 1 - Claim Reserve Factors											
\$3,000 Indexed Gross Monthly Benefit to Age 65, Reserves per \$1 Benefit, No Diagnosis, Three Month Elimination Period, 24 Month Own Occupation Period, 5.0% Discount Rate											
Age	Duration (Months)	Male	Female	Age	Duration (Months)	Male	Female	Age	Duration (Months)	Male	Female
27	4	24.70	27.90	35	4	34.22	37.74	43	4	40.68	42.48
27	9	42.20	46.40	35	9	53.96	58.00	43	9	59.66	61.74
27	18	60.60	64.90	35	18	71.40	77.06	43	18	74.16	78.54
27	27	70.10	74.50	35	27	79.62	86.02	43	27	80.02	85.24
27	48	100.60	105.20	35	48	103.08	111.04	43	48	94.04	100.74
27	60	106.10	110.20	35	60	106.26	114.04	43	60	94.24	100.78
28	4	25.89	29.13	36	4	35.41	38.97	44	4	41.36	42.86
28	9	43.67	47.85	36	9	55.43	59.45	44	9	60.12	61.88
28	18	61.95	66.42	36	18	72.75	78.58	44	18	74.17	78.28
28	27	71.29	75.94	36	27	80.81	87.46	44	27	79.69	84.63
28	48	100.91	105.93	36	48	103.39	111.77	44	48	92.43	98.78
28	60	106.12	110.68	36	60	106.28	114.52	44	60	92.23	98.41
29	4	27.08	30.36	37	4	36.60	40.20	45	4	42.04	43.24
29	9	45.14	49.30	37	9	56.90	60.90	45	9	60.58	62.02
29	18	63.30	67.94	37	18	74.10	80.10	45	18	74.18	78.02
29	27	72.48	77.38	37	27	82.00	88.90	45	27	79.36	84.02
29	48	101.22	106.66	37	48	103.70	112.50	45	48	90.82	96.82
29	60	106.14	111.16	37	60	106.30	115.00	45	60	90.22	96.04
30	4	28.27	31.59	38	4	37.28	40.58	46	4	42.72	43.62
30	9	46.61	50.75	38	9	57.36	61.04	46	9	61.04	62.16
30	18	64.65	69.46	38	18	74.11	79.84	46	18	74.19	77.76
30	27	73.67	78.82	38	27	81.67	88.29	46	27	79.03	83.41
30	48	101.53	107.39	38	48	102.09	110.54	46	48	89.21	94.86
30	60	106.16	111.64	38	60	104.29	112.63	46	60	88.21	93.67
31	4	29.46	32.82	39	4	37.96	40.96	47	4	43.40	44.00
31	9	48.08	52.20	39	9	57.82	61.18	47	9	61.50	62.30
31	18	66.00	70.98	39	18	74.12	79.58	47	18	74.20	77.50
31	27	74.86	80.26	39	27	81.34	87.68	47	27	78.70	82.80
31	48	101.84	108.12	39	48	100.48	108.58	47	48	87.60	92.90
31	60	106.18	112.12	39	60	102.28	110.26	47	60	86.20	91.30
32	4	30.65	34.05	40	4	38.64	41.34	48	4	42.58	42.95
32	9	49.55	53.65	40	9	58.28	61.32	48	9	59.79	60.36
32	18	67.35	72.50	40	18	74.13	79.32	48	18	71.50	74.47
32	27	76.05	81.70	40	27	81.01	87.07	48	27	75.32	79.03
32	48	102.15	108.85	40	48	98.87	106.62	48	48	82.39	87.22
32	60	106.20	112.60	40	60	100.27	107.89	48	60	80.29	84.91
33	4	31.84	35.28	41	4	39.32	41.72	49	4	41.76	41.90
33	9	51.02	55.10	41	9	58.74	61.46	49	9	58.08	58.42
33	18	68.70	74.02	41	18	74.14	79.06	49	18	68.80	71.44
33	27	77.24	83.14	41	27	80.68	86.46	49	27	71.94	75.26
33	48	102.46	109.58	41	48	97.26	104.66	49	48	77.18	81.54
33	60	106.22	113.08	41	60	98.26	105.52	49	60	74.38	78.52
34	4	33.03	36.51	42	4	40.00	42.10	50	4	40.94	40.85
34	9	52.49	56.55	42	9	59.20	61.60	50	9	56.37	56.48
34	18	70.05	75.54	42	18	74.15	78.80	50	18	66.10	68.41
34	27	78.43	84.58	42	27	80.35	85.85	50	27	68.56	71.49
34	48	102.77	110.31	42	48	95.65	102.70	50	48	71.97	75.86
34	60	106.24	113.56	42	60	96.25	103.15	50	60	68.47	72.13

Exhibit 2 - Claim Reserve Factors											
\$3,000 Indexed Gross Monthly Benefit to Age 65, Reserves per \$1 Benefit, No Diagnosis,											
Six Month Elimination Period, 24 Month Own Occupation Period, 5.0% Discount Rate											
Age	Duration (Months)	Male	Female	Age	Duration (Months)	Male	Female	Age	Duration (Months)	Male	Female
27	7	40.80	45.30	35	4	52.24	56.50	43	4	57.74	60.02
27	9	45.80	50.20	35	9	57.40	61.80	43	9	62.46	65.00
27	18	62.30	66.80	35	18	72.94	78.72	43	18	75.30	79.84
27	27	74.60	79.20	35	27	83.40	90.16	43	27	82.54	88.10
27	48	100.60	105.20	35	48	103.08	111.04	43	48	94.04	100.74
27	60	106.10	110.20	35	60	106.26	114.04	43	60	94.24	100.78
28	4	42.23	46.70	36	4	53.67	57.90	44	7	58.18	60.14
28	9	47.25	51.65	36	9	58.85	63.25	44	9	62.82	65.05
28	18	63.63	68.29	36	18	74.27	80.21	44	18	75.25	79.53
28	27	75.70	80.57	36	27	84.50	91.53	44	27	82.03	87.30
28	48	100.91	105.93	36	48	103.39	111.77	44	48	92.43	98.78
28	60	106.12	110.68	36	60	106.28	114.52	44	60	92.23	98.41
29	4	43.66	48.10	37	7	55.10	59.30	45	4	58.62	60.26
29	9	48.70	53.10	37	9	60.30	64.70	45	9	63.18	65.10
29	18	64.96	69.78	37	18	75.60	81.70	45	18	75.20	79.22
29	27	76.80	81.94	37	27	85.60	92.90	45	27	81.52	86.50
29	48	101.22	106.66	37	48	103.70	112.50	45	48	90.82	96.82
29	60	106.14	111.16	37	60	106.30	115.00	45	60	90.22	96.04
30	7	45.09	49.50	38	4	55.54	59.42	46	4	59.06	60.38
30	9	50.15	54.55	38	9	60.66	64.75	46	9	63.54	65.15
30	18	66.29	71.27	38	18	75.55	81.39	46	18	75.15	78.91
30	27	77.90	83.31	38	27	85.09	92.10	46	27	81.01	85.70
30	48	101.53	107.39	38	48	102.09	110.54	46	48	89.21	94.86
30	60	106.16	111.64	38	60	104.29	112.63	46	60	88.21	93.67
31	4	46.52	50.90	39	4	55.98	59.54	47	7	59.50	60.50
31	9	51.60	56.00	39	9	61.02	64.80	47	9	63.90	65.20
31	18	67.62	72.76	39	18	75.50	81.08	47	18	75.10	78.60
31	27	79.00	84.68	39	27	84.58	91.30	47	27	80.50	84.90
31	48	101.84	108.12	39	48	100.48	108.58	47	48	87.60	92.90
31	60	106.18	112.12	39	60	102.28	110.26	47	60	86.20	91.30
32	4	47.95	52.30	40	7	56.42	59.66	48	4	57.91	58.67
32	9	53.05	57.45	40	9	61.38	64.85	48	9	62.05	63.10
32	18	68.95	74.25	40	18	75.45	80.77	48	18	72.35	75.50
32	27	80.10	86.05	40	27	84.07	90.50	48	27	76.85	80.85
32	48	102.15	108.85	40	48	98.87	106.62	48	48	82.39	87.22
32	60	106.20	112.60	40	60	100.27	107.89	48	60	80.29	84.91
33	4	49.38	53.70	41	4	56.86	59.78	49	4	56.32	56.84
33	9	54.50	58.90	41	9	61.74	64.90	49	9	60.20	61.00
33	18	70.28	75.74	41	18	75.40	80.46	49	18	69.60	72.40
33	27	81.20	87.42	41	27	83.56	89.70	49	27	73.20	76.80
33	48	102.46	109.58	41	48	97.26	104.66	49	48	77.18	81.54
33	60	106.22	113.08	41	60	98.26	105.52	49	60	74.38	78.52
34	7	50.81	55.10	42	4	57.30	59.90	50	7	54.73	55.01
34	9	55.95	60.35	42	9	62.10	64.95	50	9	58.35	58.90
34	18	71.61	77.23	42	18	75.35	80.15	50	18	66.85	69.30
34	27	82.30	88.79	42	27	83.05	88.90	50	27	69.55	72.75
34	48	102.77	110.31	42	48	95.65	102.70	50	48	71.97	75.86
34	60	106.24	113.56	42	60	96.25	103.15	50	60	68.47	72.13

Exhibit 3 - Claim Reserve Factors											
\$3,000 Indexed Gross Monthly Benefit to Age 65, Reserves per \$1 Benefit, No Diagnosis, Three Month Elimination Period, 24 Month Own Occupation Period, 5.0% Discount Rate											
Age	Duration (Months)	Male	Female	Age	Duration (Months)	Male	Female	Age	Duration (Months)	Male	Female
27	7	44.40	47.20	35	7	52.80	55.52	43	7	58.50	60.54
27	9	68.70	76.00	35	9	76.22	82.72	43	9	78.52	83.32
27	18	95.00	110.80	35	18	98.28	111.12	43	18	94.36	103.40
27	27	108.30	127.50	35	27	109.34	124.62	43	27	101.26	111.72
27	48	127.50	146.40	35	48	121.34	136.00	43	48	105.34	114.92
27	60	133.70	151.10	35	60	123.54	137.10	43	60	103.96	112.72
28	7	45.45	48.24	36	7	53.85	56.56	44	7	59.10	61.03
28	9	69.64	76.84	36	9	77.16	83.56	44	9	78.59	83.14
28	18	95.41	110.84	36	18	98.69	111.16	44	18	93.57	102.10
28	27	108.43	127.14	36	27	109.47	124.26	44	27	99.87	109.69
28	48	126.73	145.10	36	48	120.57	134.70	44	48	102.93	111.84
28	60	132.43	149.35	36	60	122.27	135.35	44	60	101.12	109.24
29	7	46.50	49.28	37	7	54.90	57.60	45	7	59.70	61.52
29	9	70.58	77.68	37	9	78.10	84.40	45	9	78.66	82.96
29	18	95.82	110.88	37	18	99.10	111.20	45	18	92.78	100.80
29	27	108.56	126.78	37	27	109.60	123.90	45	27	98.48	107.66
29	48	125.96	143.80	37	48	119.80	133.40	45	48	100.52	108.76
29	60	131.16	147.60	37	60	121.00	133.60	45	60	98.28	105.76
30	7	47.55	50.32	38	7	55.50	58.09	46	7	60.30	62.01
30	9	71.52	78.52	38	9	78.17	84.22	46	9	78.73	82.78
30	18	96.23	110.92	38	18	98.31	109.90	46	18	91.99	99.50
30	27	108.69	126.42	38	27	108.21	121.87	46	27	97.09	105.63
30	48	125.19	142.50	38	48	117.39	130.32	46	48	98.11	105.68
30	60	129.89	145.85	38	60	118.16	130.12	46	60	95.44	102.28
31	7	48.60	51.36	39	7	56.10	58.58	47	7	60.90	62.50
31	9	72.46	79.36	39	9	78.24	84.04	47	9	78.80	82.60
31	18	96.64	110.96	39	18	97.52	108.60	47	18	91.20	98.20
31	27	108.82	126.06	39	27	106.82	119.84	47	27	95.70	103.60
31	48	124.42	141.20	39	48	114.98	127.24	47	48	95.70	102.60
31	60	128.62	144.10	39	60	115.32	126.64	47	60	92.60	98.80
32	7	49.65	52.40	40	7	56.70	59.07	48	7	59.59	61.03
32	9	73.40	80.20	40	9	78.31	83.86	48	9	76.27	79.76
32	18	97.05	111.00	40	18	96.73	107.30	48	18	87.38	93.83
32	27	108.95	125.70	40	27	105.43	117.81	48	27	91.06	98.32
32	48	123.65	139.90	40	48	112.57	124.16	48	48	89.77	96.07
32	60	127.35	142.35	40	60	112.48	123.16	48	60	86.09	91.72
33	7	50.70	53.44	41	7	57.30	59.56	49	7	58.28	59.56
33	9	74.34	81.04	41	9	78.38	83.68	49	9	73.74	76.92
33	18	97.46	111.04	41	18	95.94	106.00	49	18	83.56	89.46
33	27	109.08	125.34	41	27	104.04	115.78	49	27	86.42	93.04
33	48	122.88	138.60	41	48	110.16	121.08	49	48	83.84	89.54
33	60	126.08	140.60	41	60	109.64	119.68	49	60	79.58	84.64
34	7	51.75	54.48	42	7	57.90	60.05	50	7	56.97	58.09
34	9	75.28	81.88	42	9	78.45	83.50	50	9	71.21	74.08
34	18	97.87	111.08	42	18	95.15	104.70	50	18	79.74	85.09
34	27	109.21	124.98	42	27	102.65	113.75	50	27	81.78	87.76
34	48	122.11	137.30	42	48	107.75	118.00	50	48	77.91	83.01
34	60	124.81	138.85	42	60	106.80	116.20	50	60	73.07	77.56

Exhibit 4 - Claim Reserve Factors											
\$3,000 Indexed Gross Monthly Benefit to Age 65, Reserves per \$1 Benefit, No Diagnosis,											
Six Month Elimination Period, 24 Month Own Occupation Period, 5.0% Discount Rate											
Age	Duration (Months)	Male	Female	Age	Duration (Months)	Male	Female	Age	Duration (Months)	Male	Female
27	7	67.80	74.40	35	7	76.44	82.48	43	7	78.36	82.70
27	9	74.40	82.90	35	9	82.16	89.62	43	9	82.78	88.18
27	18	96.90	113.10	35	18	100.02	113.18	43	18	95.58	104.80
27	27	111.60	130.90	35	27	111.76	126.98	43	27	102.50	112.80
27	48	127.50	146.40	35	48	121.34	136.00	43	48	105.34	114.92
27	60	133.70	151.10	35	60	123.54	137.10	43	60	103.96	112.72
28	7	68.88	75.41	36	7	77.52	83.49	44	7	78.32	82.40
28	9	75.37	83.74	36	9	83.13	90.46	44	9	82.56	87.66
28	18	97.29	113.11	36	18	100.41	113.19	44	18	94.71	103.40
28	27	111.62	130.41	36	27	111.78	126.49	44	27	100.95	110.60
28	48	126.73	145.10	36	48	120.57	134.70	44	48	102.93	111.84
28	60	132.43	149.35	36	60	122.27	135.35	44	60	101.12	109.24
29	7	69.96	76.42	37	7	78.60	84.50	45	7	78.28	82.10
29	9	76.34	84.58	37	9	84.10	91.30	45	9	82.34	87.14
29	18	97.68	113.12	37	18	100.80	113.20	45	18	93.84	102.00
29	27	111.64	129.92	37	27	111.80	126.00	45	27	99.40	108.40
29	48	125.96	143.80	37	48	119.80	133.40	45	48	100.52	108.76
29	60	131.16	147.60	37	60	121.00	133.60	45	60	98.28	105.76
30	7	71.04	77.43	38	7	78.56	84.20	46	7	78.24	81.80
30	9	77.31	85.42	38	9	83.88	90.78	46	9	82.12	86.62
30	18	98.07	113.13	38	18	99.93	111.80	46	18	92.97	100.60
30	27	111.66	129.43	38	27	110.25	123.80	46	27	97.85	106.20
30	48	125.19	142.50	38	48	117.39	130.32	46	48	98.11	105.68
30	60	129.89	145.85	38	60	118.16	130.12	46	60	95.44	102.28
31	7	72.12	78.44	39	7	78.52	83.90	47	7	78.20	81.50
31	9	78.28	86.26	39	9	83.66	90.26	47	9	81.90	86.10
31	18	98.46	113.14	39	18	99.06	110.40	47	18	92.10	99.20
31	27	111.68	128.94	39	27	108.70	121.60	47	27	96.30	104.00
31	48	124.42	141.20	39	48	114.98	127.24	47	48	95.70	102.60
31	60	128.62	144.10	39	60	115.32	126.64	47	60	92.60	98.80
32	7	73.20	79.45	40	7	78.48	83.60	48	7	75.68	78.68
32	9	79.25	87.10	40	9	83.44	89.74	48	9	79.06	82.91
32	18	98.85	113.15	40	18	98.19	109.00	48	18	88.19	94.73
32	27	111.70	128.45	40	27	107.15	119.40	48	27	91.44	98.51
32	48	123.65	139.90	40	48	112.57	124.16	48	48	89.77	96.07
32	60	127.35	142.35	40	60	112.48	123.16	48	60	86.09	91.72
33	7	74.28	80.46	41	7	78.44	83.30	49	7	73.16	75.86
33	9	80.22	87.94	41	9	83.22	89.22	49	9	76.22	79.72
33	18	99.24	113.16	41	18	97.32	107.60	49	18	84.28	90.26
33	27	111.72	127.96	41	27	105.60	117.20	49	27	86.58	93.02
33	48	122.88	138.60	41	48	110.16	121.08	49	48	83.84	89.54
33	60	126.08	140.60	41	60	109.64	119.68	49	60	79.58	84.64
34	7	75.36	81.47	42	7	78.40	83.00	50	7	70.64	73.04
34	9	81.19	88.78	42	9	83.00	88.70	50	9	73.38	76.53
34	18	99.63	113.17	42	18	96.45	106.20	50	18	80.37	85.79
34	27	111.74	127.47	42	27	104.05	115.00	50	27	81.72	87.53
34	48	122.11	137.30	42	48	107.75	118.00	50	48	77.91	83.01
34	60	124.81	138.85	42	60	106.80	116.20	50	60	73.07	77.56

**Live Twice, Inc. (Live Twice)**

Live Twice, incorporated in Florida, is a mature firm that offers a generous retiree medical and pharmacy package to its union employees. The plan is fully insured with the employer fully subsidizing the premium for its retirees. Active employees, pre-Medicare retirees, and Medicare-eligible retirees pay the same premium. Live Twice’s 2020 monthly rates and census data are given below:

<b>Exhibit 1 - Monthly Rate</b>	
Active & Retiree	\$455.00

Summary of active employees and retirees are provided in Exhibit 2 and Exhibit 3.

<b>Exhibit 2 - Active Employee Data</b>		
Headcount	Age (years)	Service (years)
225	30	8
110	40	14
70	50	22

<b>Exhibit 3 - Retiree Data</b>			
Headcount	Age (years)	Family Status	Spouse Age (years)
40	70	Married	65
30	70	Single	n/a
70	80	Single	n/a

Skyfall assists Live Twice in preparation of its financial statements for post-retirement benefits. The average cost of the retiree medical plan in 2018, as per Skyfall’s estimates, is given in Exhibit 4 below:

<b>Exhibit 4 - Retiree Medical Data</b>	
Age (years)	Annual Cost Per Person (\$)*
60-64	10,200
65-69	2,600
70-74	2,950
75-79	3,250
80 +	3,750



## Another Day, Inc. (Another Day)

Another Day, located in Toronto, Ontario offers medical and pharmacy coverage to its 400 active employees and 200 retirees. The plan is fully insured with the employer fully subsidizing the premium for its retirees.

Exhibit 1 - Monthly Rate	
Active & Retiree	\$185.00

A summary of the benefits plan is provided in Exhibit 2 below:

Exhibit 2 - Plan Provisions	
Benefit	Coverage Level
Life Insurance	\$10,000
Drugs	80% (\$1,000 annual OOP max)
Hospital	100% (semi-private)
Paramedical	100% (\$500 per calendar year per practitioner max)
Vision	100% (\$200/24 mth max)
Dental	No coverage
Emergency out of country	60 day max (\$500,000 lifetime max)
Other Medical	100%

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

Exhibit 3 - Active Employee Data			
Headcount	Age (years)	Service (years)	Average Annual Salary (\$)
100	30	10	50,000
200	40	15	80,000
100	50	25	100,000

Exhibit 4 - Retiree Data				
Headcount	Age (years)	Average Annual Salary at Retirement(\$)	Family Status	Spouse Age (years)
50	70	80,000	Married	65
50	70	80,000	Single	n/a
100	80	80,000	Single	n/a

Another Day employs Skyfall Canada to assist with preparation of its financial statements for the post-retirement benefit plan.

The average cost of the retiree medical plan in 2020 was determined by the consulting firm as follows:

<b>Exhibit 5 - Retiree Medical Data</b>	
Age (years)	Annual Cost Per Person (\$)*
60-64	2,000
65-69	1,000
70-74	1,100
75-79	1,300
80 +	1,500

\* Includes administration costs and taxes

Skyfall Canada also determined the actuarial present value of medical and life insurance benefits for active employees as follows:

<b>Exhibit 6 - PV Future Benefits for Medical and Life Insurance Companies</b>		
Age (years)	Medical Costs (\$)	Life Insurance (\$)
30	5,000	1,000
40	10,000	1,500
50	20,000	2,000