Report on the Proposed 2016 Cancer Claim Cost Valuation Tables

**Joint American Academy of Actuaries and Society of Actuaries
Cancer Claims Cost Tables Work Group**

Presented to the National Association of Insurance Commissioners'
Health Actuarial Task Force

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Cancer Claims Cost Tables Work Group

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Special thanks to Aolin Zhang, MAAA, ASA for assistance with data graduation

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I. Summary of Results

This section will summarize the most significant results of this study. The purpose of this project was twofold:

- To develop a new set of valuation tables for use with cancer insurance policies
- To aid actuaries pricing and reviewing product filings by providing information about the initial data provided by the industry in response to the data call.

The current tables used to value reserves for cancer policies were developed in 1985 based on experience data from the late 1970s. Since that time there have been changes in the medical treatment of cancer and therefore the product design of cancer policies. These trends and changes have limited the relevance of the 1985 tables, which can be seen in the results of this study.

The study was limited to two benefits included in typical cancer policies: first occurrence benefit and cancer hospitalization. The first occurrence benefit is generally a lump sum amount paid on the first occurrence of cancer. Hospitalization benefits are generally indemnity amounts paid on a per day basis when the covered person is confined to a hospital for the treatment of a covered cancer.

Key results of our work are provided below:

- The incidence of cancer in the proposed valuation table shows a slightly different pattern by attained age than that in the 1985 table. The proposed table for first occurrence rates shows higher incidence rates in the middle-age years than the 1985 tables. We believe that this is due to better medical tests for presence of cancer. The situation reverses in older ages, with the 1985 table first occurrence rates being higher than the proposed table. Figure 1 below demonstrates this difference.

Figure 1—First Occurrence Rate Comparison: 1985 to Proposed
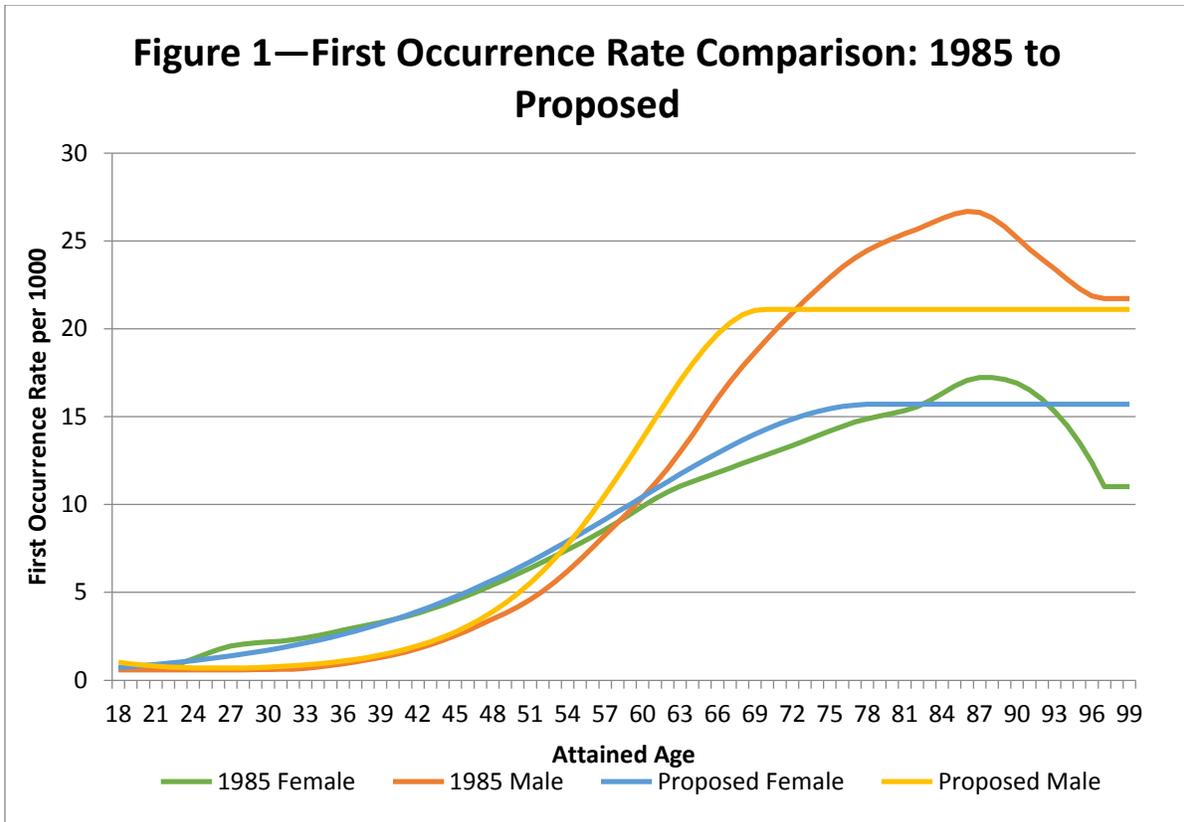
This results in reserves for this benefit that rise faster but peak lower and fall faster than those computed off the 1985 tables.

- The hospitalization claims costs by attained age are significantly lower than those in the 1985 tables. While we cannot separate the 1985 tables into incidence and length of stay, we believe that both are drivers of the difference. Overall medical trends have shown that outpatient surgery has trended higher since the 1985 tables, with a corresponding decrease in inpatient surgery stays. The overall length of hospital stays also have trended shorter. Figures 2 and 3 below demonstrate the difference in claims costs by age on each payment and all payment bases, respectively.

Figure 2—Each Payment Hospitalization Claim Cost Comparison: 1985 to Proposed
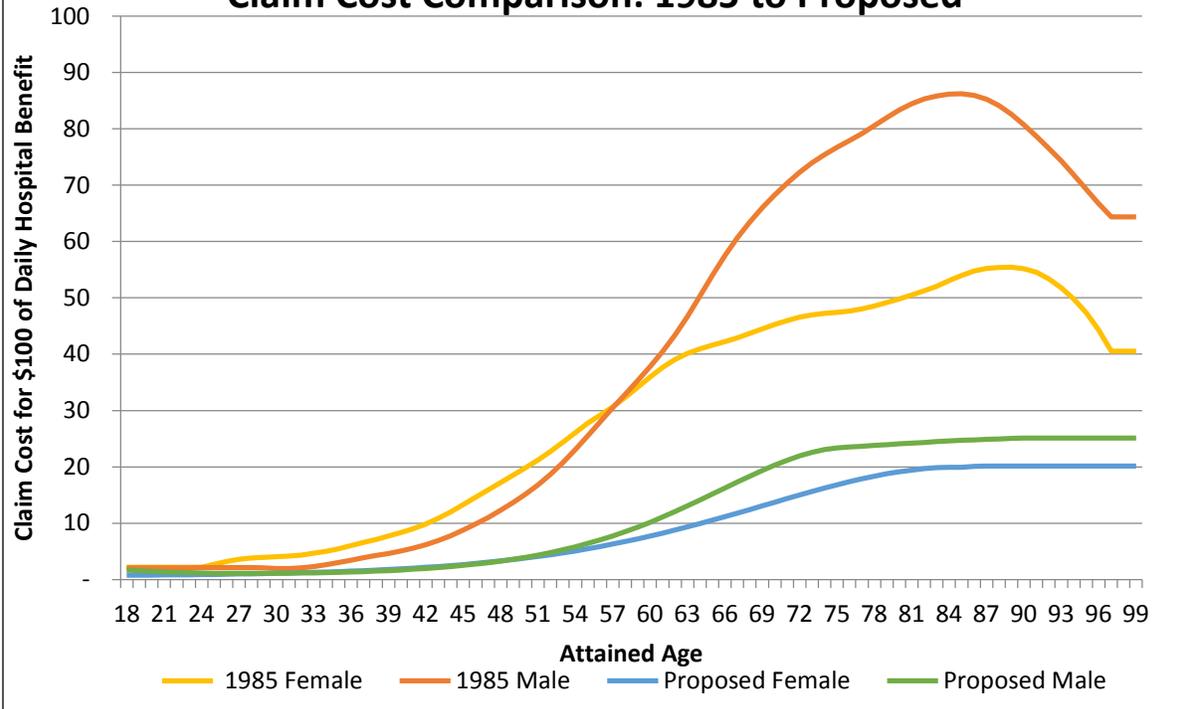
Figure 3—All Payment Hospitalization Claim Cost Comparison: 1985 to Proposed
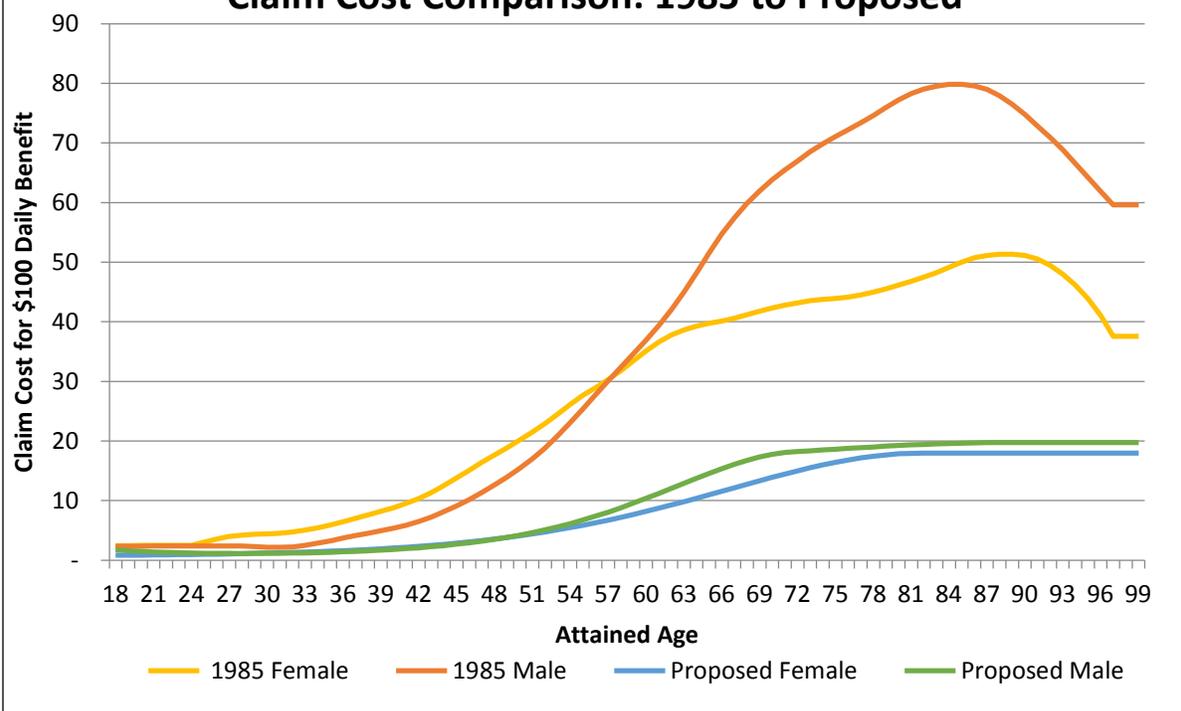
The result of the difference in claim costs is a significantly lower reserve buildup using the proposed table as compared to the 1985 table.

- The initial raw data showed declining first occurrence rates, hospital incidence rates, and lengths of stay at older attained ages (approximately age 80 depending on the gender and whether all payment or each payment incurral dating is being considered). The 1985 first occurrence rates also exhibited a decline, but only at ages over 90. The Cancer Claims Cost Tables Work Group (work group) agreed that the declining pattern of incidence rates for both genders should be removed due to the risk of negative reserve calculations. A discussion of how the work group graduated the data can be found in section VII.

- The work group elected not to produce a select and ultimate table for the final work product. In conducting the analysis, the group found a pattern of anti-selection in the first several durations. A presentation of those findings can be found in section VI and the proposed tables can be found in the appendicies.

II. Introduction

This report describes the work performed by the work group. The purpose of this report is to propose new cancer valuation tables for cancer policies as well as to document the processes followed by the work group in preparing the proposed tables. In addition to the proposed valuation tables and documentation provided, the work group has also included experience information from the cancer claim cost study conducted in order to make this information available to practitioners in the industry.

III. Work Group Formation

On May 12, 2004, Julia Philips, chair of the Accident and Health Working Group (AHWG) of the Life and Annuity Task Force of the National Association of Insurance Commissioners (NAIC) requested the SOA Board Advisory Group on Research to review the 1985 cancer tables. This charge was subsequently taken over by the NAIC's Health Actuarial Task Force (HATF) following its formation. The request is provided below:

> *The Accident and Health Working Group of the Life and Health Actuarial Task Force accepted a proposal at the NAIC 2004 Spring National Meeting to pursue a review of the 1985 NAIC Cancer Claim Cost Tables used as the minimum valuation standard for contract reserves for individual policies currently being issued.*
>
> *It was noted that these tables have become dated and could produce inadequate reserves when used. Specifically, cancer detection methods and treatment procedures, such as chemotherapy and prescription drugs, have materially changed in the years since the 1985 tables were adopted. This could cause a change in the claim cost patterns for the product types being offered today from those offered when the 1985 tables data was collected and reviewed. In addition,*

regulators have seen significant rate increases for policies that used the 1985 tables to price cancer products.

The Accident and Health Working Group requests the assistance of the Society of Actuaries in pursuing said review. Please consider undertaking a study of recent cancer claim costs as compared to those in the 1985 tables along with subsequent suggestions for appropriate tables for use as the future valuation standard for individual cancer policies.

Please advise us of your ability to undertake such a study and any resulting timeframe for expected completion. The Accident and Health Working Group stands ready to answer any questions you may have regarding this request.

In April 2010, the AHWG requested the Academy provide guidance on how to adjust the cancer tables to account for the current level of benefits, and the SOA and the Academy then formed the work group.

The original intent of the work group was to generate new cancer valuation tables with the same breadth of benefits as the 1985 tables. To achieve this objective, a broad data call was sent to carriers in the industry requesting historical experience on the wide variety of benefits typically included in cancer policies. The response to this data call was poor, resulting in a reassessment of the task by the work group. Given the difficulties, the work group elected to revise the data call to request a smaller subset of key cancer benefits rather than the large number previously requested.

First occurrence and hospitalization were identified as particularly important. Radiation and chemotherapy benefits were also considered, but given the wide range of benefit configurations in the industry, it was not feasible to collect and aggregate radiation and chemotherapy claim data from a broad range of carriers in a meaningful way. As a result, the data collected and processed in support of this report is for the first occurance and hospitalization benefits only.

IV. Industry

Fifteen insurers responded to a request by the SOA to supply claim data on first occurrence and hospitalization benefits from cancer policies (excluding critical illness policies) covering years 2001 through 2010. These 15 companies included the major writers of cancer policies and, in total, represented about 69 percent of the industry in terms of 2008 annual earned premium.

The companies that submitted data were:

- American Family Life Assurance Company of Columbus
- American Family Life Assurance Company of New York
- American Fidelity Assurance Company
- American Heritage Life Insurance Company

- Central United Life Insurance Company (submission representing both direct business and business assumed/acquired)
- CNO Financial Group (submission representing both direct business and business assumed/acquired)
- Colonial Life & Accident Insurance Company
- Combined Insurance Company of America
- Combined Life Insurance Company of New York
- Continental American Insurance Company
- Family Heritage Life Insurance Company of America
- Humana Insurance Company (submission representing both direct business and acquired business from Kanawha Insurance Company)
- Life Insurance Company of Alabama
- The MEGA Life and Health Insurance Company
- Mid-West National Life Insurance Company of Tennessee

V. Data Call, Processing, and Calculations

A. Overview

The objective of the study was to receive and summarize detailed policyholder experience data from 2001 through 2011 from insurers that have provided cancer insurance. The data was collected and analyzed for use by the work group. The data call provided to all potential study participants is included in Appendix 1. Milliman Inc. was engaged by the SOA to complete the data compilation of the cancer experience. This section describes the data scubbing, scaling, and deidentification processes performed by Milliman and the SOA.

B. Data Scrubbing

The data was gathered from the companies and subjected to a rigorous data scrubbing process. The scrubbing process better assured that the data presented to the work group was appropriate for use.

Across all submissions, data was excluded for a variety of reasons. If Milliman could not reliably identify key information for the insured, key information for the claim, and a reliable link between the two, the data was not included in the study. After considerable correspondence with each of the submitters, this missing data was populated if available, and any residual insureds with missing data were excluded. In some instances, entire datasets were excluded. General information with respect to the data submissions is included below. Routine data maintenance items, such as exclusions due to missing birthdates or gender indicators as well as non-covered benefit types, are not included in the list below.

- Data was submitted for primary insureds for all submitters. Some submitters were also able to provide spousal information. No submitter included reliable child data.
- With respect to spousal data, in some instances only a spouse's gender was provided and not the spouse's date of birth. In these instances an age difference study at the submitter company level was utilized to populate the birthdate of the spouse based on the birthdate and gender of the primary insured.
- There were instances of overlapping exposure in the study. These instances were collapsed down to continuous single exposure records to avoid duplicative contributions.
- Often the data submissions included gaps in coverage. Specific feedback was received from the submitting companies in order to properly account for these gaps.
- Where possible, skin cancer and in situ claims were specifically excluded from the study; however, there were instances where these claims may have been present and Milliman was unable to identify them.

Successive Hospital Stays

Consistent with industry practice, successive hospital stays have been considered as a single confinement if they are separated by 30 days or less. Successive stays that meet this requirement have been combined to a single confinement incidence with a length of stay calculated as total confinement days for the applicable stays.

Truncating Based on Age

For all companies, all records associated with an issue age of less than 18 years old or greater than 90 years old were removed from the raw data submitted to the work group. Results were also excluded for attained ages greater than 90 due to limited exposure and a perceived lack of reliability associated with the results for these ages.

Outlier Data

Within the study there were cells that contained obvious outlier data. Commonly these outliers were visible where exposure is sparse at the high and low ages. The raw data provided to the work group was not processed or smoothed to remove outliers, as they are expected in any large data set.

Spouse Data

Where covered spouse data was submitted, it has been included under the spouse's characteristics, not the characteristics of the primary insured. As an example, for a 50-year-old male covered with his 48-year-old female spouse, the spouse would be included in the appropriate contribution cell for a 48-year-old female, not aggregated with the primary insured's data as a 50-year-old male.

C. Incidence and Exposure

Once the data provided by the submitters was processed, incidence, exposure, and length of stay information was calculated. Any user of this report and the proposed valuation tables needs to be cognizant of the methodology used to develop the exposure and incidence presented to assure that the approach is appropriate for and consistent with the user's intended application, particularly in determining premium rates and reserves.

The scrubbed data for the first occurrence portion of the study has been processed into incidence rate results. The scrubbed data for the hospitalization portion of the study has been processed into incidence rate and length of stay results. Where possible, the hospitalization data has been presented using two calculation methodologies: "Each Payment" and "All Payment." While the exposure calculated between the methodologies is equal for a given policyholder, incidence and length of stay is derived differently under each methodology. These two methodologies are provided because they are both used by insurance companies active in the market.

Exposure and Incidence—First Occurrence

All calculations are on an age last birthday (ALB) basis and are associated with the attained age of the insured person on the most recent policy anniversary.

- If the policy is in force for the entire policy year and no claim has been recorded, incidence is equal to 0 and exposure is equal to 1.
- If the policy is in force for the entire policy year and a first occurrence claim is recorded, incidence is equal to 1 and exposure is equal to 1.
- If the policy terminated before the end of the policy year and no claim has been recorded in the partial policy year, incidence is equal to 0 and exposure is equal to the proportion of the policy year during which the coverage was in force. For example, if the policy was in force for half a year, the exposure would be 0.5.
- If the policy terminated before the end of the policy year and a claim has been recorded, incidence is set to 1 and exposure is set to 1.

It should be noted that when a policy incurred a first occurrence claim, no subsequent exposure for this policy was included in the study. This is consistent with an administration philosophy that terminates policyholders following a first occurrence benefit for an individual as no subsequent first occurrence benefit is available.

Exposure and Incidence—Hospitalization—Each Payment

All calculations are on an ALB basis and are associated with the attained age of the insured person on the most recent policy anniversary.

- If the policy is in force for the entire policy year and no claim has been recorded, incidence is equal to 0 and exposure is equal to 1.
- If the policy is in force for the entire policy year and one or more claims have been recorded, incidence is equal to the number of distinct hospitalizations and exposure is equal to 1.
- If the policy terminated before the end of the policy year and no claims have been recorded in the partial policy year, incidence is equal to 0 and exposure is equal to the proportion of the policy year during which the coverage was in force. For example, if the policy was in force for half a year, the exposure would be 0.5.
- If the policy terminated before the end of the policy year and one or more claims have been recorded in the partial policy year, incidence is equal to the number of distinct hospitalizations and exposure is equal to the proportion of the policy year during which the coverage was in force.

Exposure and Incidence—Hospitalization—All Payment

All exposure calculations are on an ALB basis and are associated with the age of the individual on the most recent policy anniversary. Incidence for claims are calculated consistently with the "Hospitalization—Each Payment" approach, but the claims are associated with the policy year (duration) during which the first hospitalization occurred. It is important to note that these claims are dated based upon the first hospitalization, not the first occurrence of cancer or first instance of any type of non-wellness cancer claim.

- If the policy is in force for the entire policy year and no claim has been recorded, incidence is equal to 0 and exposure is equal to 1.
- If the policy is in force for the entire policy year and one or more claims have been recorded, exposure is equal to 1. Incidence is equal to the number of distinct hospitalizations and is recognized with the incidence for the policy year when the first hospitalization for the covered insured occurred.
- If the policy terminated before the end of the policy year and no claims have been recorded in the partial policy year, incidence is equal to 0 and exposure is equal to the proportion of the policy year during which the coverage was in force. For example, if the policy was in force for half a year, the exposure would be 0.5.
- If the policy terminated before the end of the policy year and one or more claims have been recorded in the partial policy year, exposure is equal to the proportion of the policy year during which the coverage was in force. Incidence is equal to the number of distinct hospitalizations and is

recognized with the policy year during which the first hospitalization occurred.

Hospitalization—Length of Stay

Length of stay for the study was calculated by summing the total days of stay and dividing by the total number of claims for a given data cell.

D.   **Data Scaling**

The scrubbed data was scaled to meet the confidentiality guidelines set forth by the SOA. The guidelines require that for each gender and age combination there have to be at least five distinct companies that contribute exposure (five companies requirement). Additionally, no company can contribute more than 25 percent of the exposure for a given gender and age combination (25 percent limit). This helps avoid one company's experience from unduly influencing the overall results of the study.

For the All Payment Hospitalization study as well as First Occurrence study, each age and gender combination met the five companies requirement. However, some age and gender combination failed the 25 percent limit requirement and the data for these age and gender combinations had to be scaled. As a result, incidence and days of stay are often presented as fractional values.

For the Each Payment study, the five companies requirement was not met for males at certain younger and older ages as well as age 43. Therefore, male results were aggregated at certain points into age bands such that each age band met the requirement (18-37 band, 43-44 band, and 76-90 band). There was no need to aggregate any of the female data, so the female results are presented on an age-distinct basis. Again, both male and female data had to be scaled for many ages due to failing the 25 percent limit requirement.

Where the male data was aggregated, the aggregated data is presented for an age band and represents the sum of the data for all ages within the band. The aggregated data for the age band has not been divided in order to provide an implied exposure per age.

E.   **Scaled and Processed Data**

After scaling and processing, the data was in a form to provide to the work group. It was deidentified as to participant. In total, approximately 27 million life years of exposure are included in the first occurrence portion of the study. The data tables containing the raw data have been included in this report as Appendix 2. It should be noted that while this data has been processed and scaled as described above, it is unsmoothed or otherwise refined for use. Below is a summary of final scaled total exposure amounts by age band and gender.

TABLE 1 FIRST OCCURRENCE EXPOSURE BY AGE BAND AND GENDER				
	Life Years		**Distribution**	
Age Band	**Female**	**Male**	**Female**	**Male**
18-39	3,375,534	2,152,416	12.6%	8.0%
40-49	4,849,821	2,965,059	18.1%	11.1%
50-59	5,298,167	3,056,370	19.8%	11.4%
60-69	2,466,416	1,484,292	9.2%	5.5%
70+	722,902	417,417	2.7%	1.6%
Total	16,712,840	10,075,554	62.4%	37.6%

Approximately 25 million life years of exposure are included in each of the hospital confinement portions of the study. Below is a summary of the final scaled total exposure amounts by age band and gender for both the Each Payment and the All Payment study results. It should be noted that some submissions were specific to a particular hospital confinement calculation methodology. This accounts for the difference in the overall exposure between the two methodologies.

TABLE 2 HOSPITALIZATION—EACH-PAYMENT EXPOSURE BY AGE BAND AND GENDER				
	Life Years		**Distribution**	
Age Band	**Female**	**Male**	**Female**	**Male**
18-39	3,327,847	1,962,415	13.3%	7.8%
40-49	4,794,804	2,594,810	19.1%	10.4%
50-59	5,344,557	2,750,622	21.3%	11.0%
60-69	2,262,747	1,315,465	9.0%	5.2%
70+	425,772	291,743	1.7%	1.2%
Total	16,155,727	8,915,055	64.4%	35.6%

TABLE 3 HOSPITALIZATION—ALL-PAYMENT EXPOSURE BY AGE BAND AND GENDER				
	Life Years		**Distribution**	
Age Band	**Female**	**Male**	**Female**	**Male**
18-39	3,331,863	2,028,091	13.0%	7.9%
40-49	4,848,404	2,712,846	18.9%	10.5%
50-59	5,362,188	2,834,298	20.9%	11.0%
60-69	2,308,912	1,377,106	9.0%	5.3%
70+	546,500	357,905	2.1%	1.4%
Total	16,397,867	9,310,246	63.9%	36.1%

VI. Significant Findings in the Raw Data

Once the data processing was complete and the data was provided to the work group, the characteristics of the data were analysed and evaluated. Additionally, the data was reviewed for overall reasonableness by the group as a whole. In order to facilitate the review of the data, the work group formed subcommittes to consider specific topics. The subgroups and key summaries of their analysis are presented below.

A.   Older and younger ages

The subgroup working on older and younger ages observed a decline in incidence rates at the older ages that was inconsistent with the 1985 cancer tables. Given the limited amount of data at older ages, it was difficult to determine whether the drop in incidence rates was due to a lack of credible data or indicative of a true decline. The subgroup reviewed cancer incidence data available from the National Cancer Institute Surveillance, Epidemiology, and End Result Program (SEER). The incidence rates presented in SEER also supported a decline in incidence rates at advanced ages. The subgroup presented these findings to the work group as a whole for discussion. Based on the information available to the work group as well as the group's collective experience, it was determined that there was sufficient evidence to be comfortable with a materially flatter older age claim cost curve relative to the 1985 tables. It was decided that the data should be graduated and smoothed, but that it was not necessary to artificially induce an older age curve consistent with the slope of the 1985 tables.

The subgroup observed increased volatility at the very old and very young ages due to limited exposure. This was expected, and the work group anticipated that this volatility would be smoothed prior to the finalization of the tables.

The subgroup made a number of observations with respect to gender differences at the older ages and overall patterns. Based on discussion within the subgroup and subsequent discussion with the work group, none of the patterns observed created any material concerns.

B.   Length of Stay

There have been significant changes in the health care delivery system since the original study on cancer incidence and length of stay in 1985. Advances in screening and detection technology as well as treatment and advances in surgical techniques have had significant impacts on the results. Notably, overall lengths of stay for inpatient hospital admissions have dropped significantly over the past 25 years. The subgroup working on length of stay observed decreased lengths of stay in the new study data compared to the 1985 tables, consistent with observed treatment trends. Other notable observations from the length of stay data:

- The data indicated that adults with incidence of cancer at younger ages (<30 years) have a higher average length of stay, with a distinct difference between males and females.
  - Further research, including discussions with physicians, indicated that the types of cancer diagnosed in adults less than 30 is materially different than those in older ages, typically more leukemia and lymphoma requiring longer treatment as compared to site tumors, which more often require a surgical stay for extraction.
  - It is more likely that incidence of cancer at older ages is detected sooner, thereby requiring less acute resources.
- The data implied that length of stay begins to increase in older ages, but at a relatively slow rate, likely reflecting the overall trend of all admissions as individuals age.

Overall this subgroup had no material concerns with respect to the data and supported the development of separate incidence and length of stay tables to be created for the proposed valuation tables.

C.   Selection

The subgroup working on selection conducted analysis on the durational data gathered for the study in order to determine whether selection was present and should be reflected in the proposed tables. No discernible positive selection was observed. On the contrary, the group observed some anti-selection in early durations of the first occurrence data and to a lesser extent for the hospitalization data, where ultimate rates were lower than select period rates, but patterns were not uniform.

Based on its analysis, the subgroup recommended that the proposed valuation tables be presented in ultimate rather than select and ultimate form. The subgroup

recommended that the anti-selection observed in the First Occurrence data be included in the final work group cancer table report.

Aggregate, age-adjusted durational selection patterns observed in the raw first occurrence data have been included with this report as Appendix 3. In order to calculate the age-adjusted selection factors, the durational data received from Milliman was analyzed. Data by unique duration was provided by Milliman for durations 1-4 only; durations 5 and higher were aggregated. First, data by duration was aggregated to calculate the relative incidence rate between each duration and the ultimate 5+ duration. These incidence rate relationships were then adjusted to remove the calculated impact of aging across the durations. This was done by analyzing the average age for each duration (i.e., 1, 2, 3, 4, and 5+) and determining the average impact of aging utilizing the incidence trends from the raw first occurrence data. The impact of aging between each duration and the ultimate 5+ duration was then removed from the unadjusted selection factors in order to produce the age-adjusted selection factors included in Appendix 3.

The basic and loaded tables included with this report represent the aggregate experience across all durations without an adjustment for the anti-selection observed in the earlier durations. The exposure-weighted average duration for the raw first occurrence data used in the study, where all durations past 4 are assigned duration 5, is 3.5.

Throughout the review of the data, all subgroups and the work group as a whole considered the differences between the 1985 cancer tables and the proposed cancer tables. Where material differences were present, the work group found them to be explicable based upon known trends in medical treatment as well as other incidence rate and historical experience information available to us from public sources as well as our own experience.

VII.   Creation of the Basic Tables

The scaled initial data exhibited volatility typical in industry data collection. The data needed to be graduated prior to finalizing basic and valuation tables. The work group tested a large number of graduation methods to achieve several goals:

- Smooth the inherent volatility in the data collected
- Provide a good fit to the initial data
- Demonstrate flexibility to control the risk of negative reserve calculations due to declining data patterns for younger and older ages
- Demonstrate flexibility to develop reasonable patterns where data over a number of attained ages had to be aggregated in order to meet SOA confidentiality guidelines

The work group chose a graduation method termed GLM-3, a form of generalized linear model, as the best choice for graduating the cancer study data. A generalized linear model

is a statistical process that uses a least squares regression approach to approximate the relationship between one or more predictor variables and a single response variable. Here, we have used the abbreviation GLM-3 to represent a generalized linear model with binomial distribution (logistic regression) that uses an underlying cubic polynomial of the following form,

$$ln\left(\frac{(P)}{1-P}\right) = b_o + b_1X + b_2X^2 + b_3X^3$$

where
P is the quantity being predicted,
b_i are parameters, and
X represents the predictor variable age, as the basis of its approximation.

The GLM-3 model provides a good fit for the underlying data and allows for an inflection point, because the data suggested one was needed. A goodness of fit test using sum squared variance was used when choosing the graduation method. Additional information regarding the graduation process followed is included below by benefit type.

A.   **First Occurrence**

The scaled initial data for both males and females showed an upward pattern to attained ages in the early 60s. At that point the data becomes more volatile and shows a pattern leveling off and eventual declining. This can be observed in the orange ungraduated data line in Figures 4 and 5 below. The initial attemps at graduation utilized all attained ages in order to produce a result. When the GLM-3 graduation method was used on all the attained age data, the result stayed close to the initial data for attained ages into the 60s for both genders. The graduated results for ages beyond 70 varied by gender, but ultimately resulted in a decline in incidence rates for older ages. This can be observed in the grey lines shown in Figures 4 and 5 below.

The work group agreed that the declining pattern of incidence rates for both genders should be removed due to the risk of negative reserve calculations. The work group agreed that the GLM-3 method should be applied to the largest subset of attained ages that would yield a monotonically increasing curve. For both genders, the oldest age was eliminated from the graduation process one age at a time until the resulting graduated curve showed a monotonically increasing pattern. For ages above the subset age, the highest subset age rate was used for attained ages up to 90. The effect of this is to level the curve after the highest subset age. The graphs below show the result of this age subset graduation in yellow.

The final basic table data produced by the work group is represented by the GLM-3 on age subset.

Figure 4—Male First Occurrence Rate Summary

Legend: Ungraduated — GLM3 on All Attained Ages — GLM3 on Age Subset
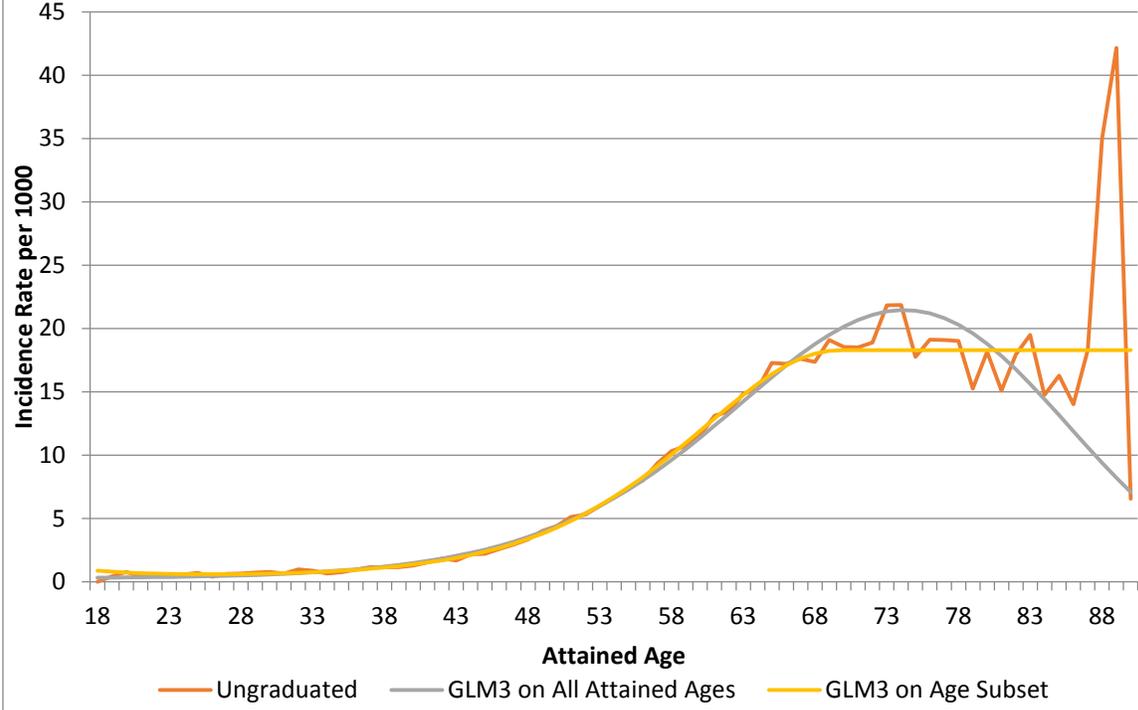
Figure 5—Female First Occurrence Rate Summary

Legend: Ungraduated — GLM3 on All Attained Ages — GLM3 on Age Subset
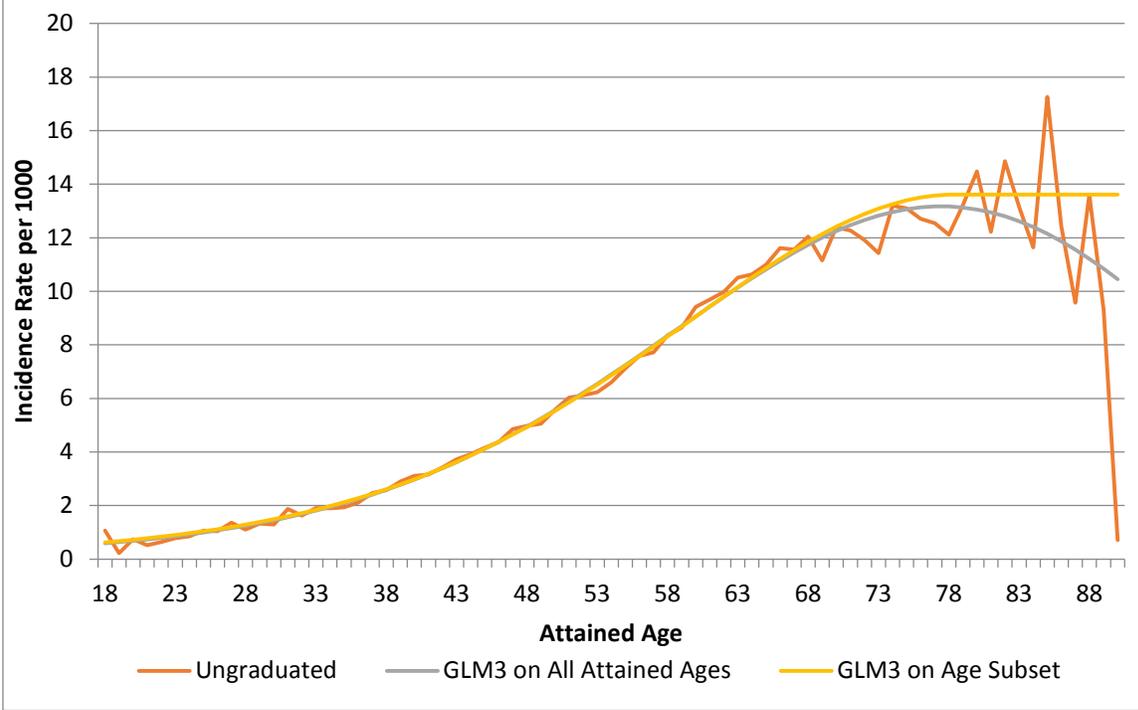
B.   **Each Payment Hospitalization**

Beyond the distinction between all payment and each payment hospitalization claims, the hospital claim cost data is presented separately by incidence and length of stay. The work group graduated incidence and length of stay data separately in order to preserve the disctinction in the proposed valuation tables. The older age male rates were combined due to SOA confidentiality guidelines as described in the data scaling section presented earlier in this report. As such, it was necessary to make an adjustment to the graduation process utilized in order to account for the banding. Where banding was present, the exposure-weighted average age from the appropriate ages in the female each payment hospitalization data was utilized to define the modeled age for each of the age bands in the male data. As an example, the female each payment exposure-weighted average age for ages 76-90 was 80.1; therefore, 80 was the assumed modeled age for the combined male ages 76-90 band for graduation purposes. The total exposure for the age band was then assigned to the assumed modeled age in order to perform the graduation. The work group considered and tested multiple methodologies in order to appropriately consider the male age bands, with little variability in results.

Due to the presence of banding in the male each payment data, a trend in older ages incidence rates is not readily apparent in the orange ungraduated data line in Figure 6 below. Use of all attained ages in the graduation process again resulted in a decrease in incidence rates at higher ages, as shown in the gray line in Figure 6 below. As a result, a consistent subset age methodology was utilized in order to flatten the incidence rates at older ages. The final age subset graduation result can be observed as the yellow line in Figure 6 below.

Figure 6—Male Hospitalization Each Payment Incidence Rate Summary
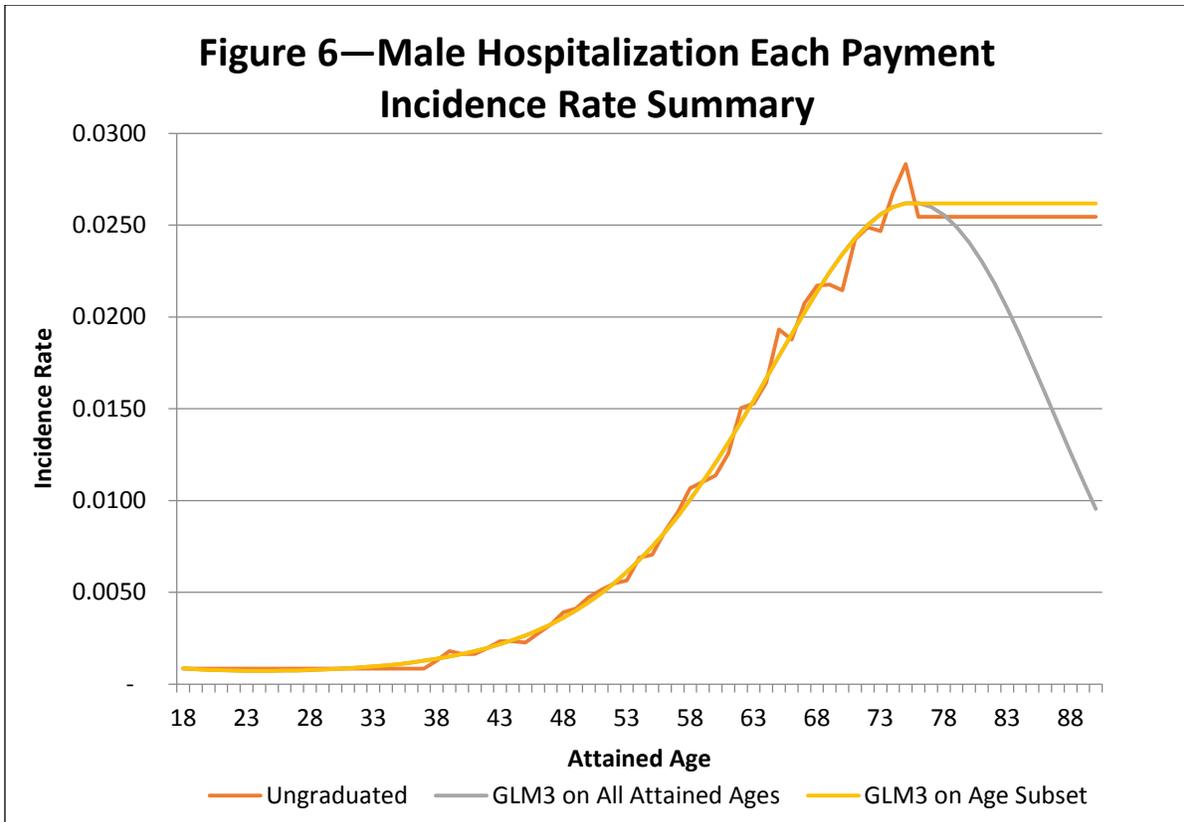
The rates for females show a declining pattern at older ages, consistent with ungraduated first occurrence data presented in Figures 4 and 5 above. The application of GLM-3 with all ages, as previously discussed, results in an increasing pattern by attained age. Therefore, consistent with the other benefit type presented previously, an age subset was utilized to develop the graduated female hospitalization each payment data.

**Figure 7—Female Hospitalization
Each Payment Incidence Rate Summary**
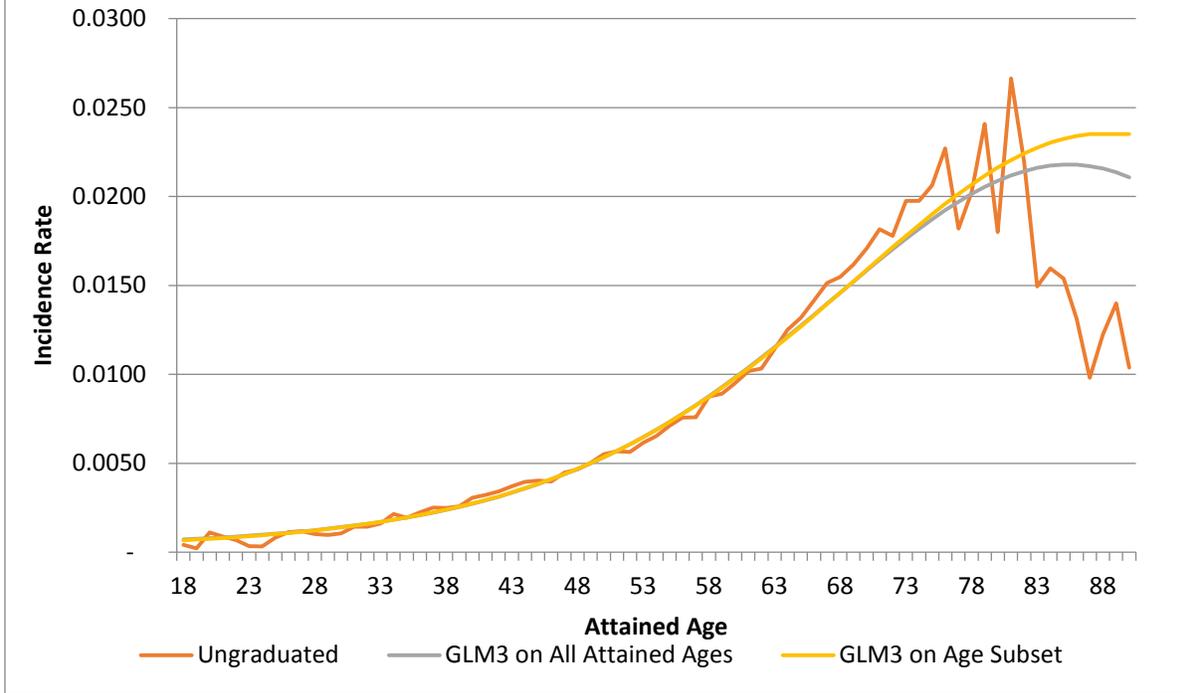
As described in the hospitalization each payment discussion above, due to data aggregation, male length of stay was banded at certain ages. The banding can be observed in Figure 8 below, which contains the presentation of the male each payment length of stay graduation results. The methodology for graduating with the age bands for the length of stay data is consistent with the approach utilized for the hospitalization each payment incidence rate data.

Female each payment length of stay rates were very high at young ages before stabilizing, which can be observed in Figure 9. The scale of the female graph below is not able to show the outlier young age length of stay. As an example, the age 20 female length of stay was 79.6 days. The exact length of stay for each age can be found in Appendix 2 of this report. The method used for graduation for both males and females was similar to that described for first occurrence. The figures below show the result of this graduation method (initial data, GLM-3 graduation on all attained ages, and GLM-3 on age subset) for male and female each payment lengths of stay.

Figure 8—Male Hospitalization
Length of Stay Each Payment Summary
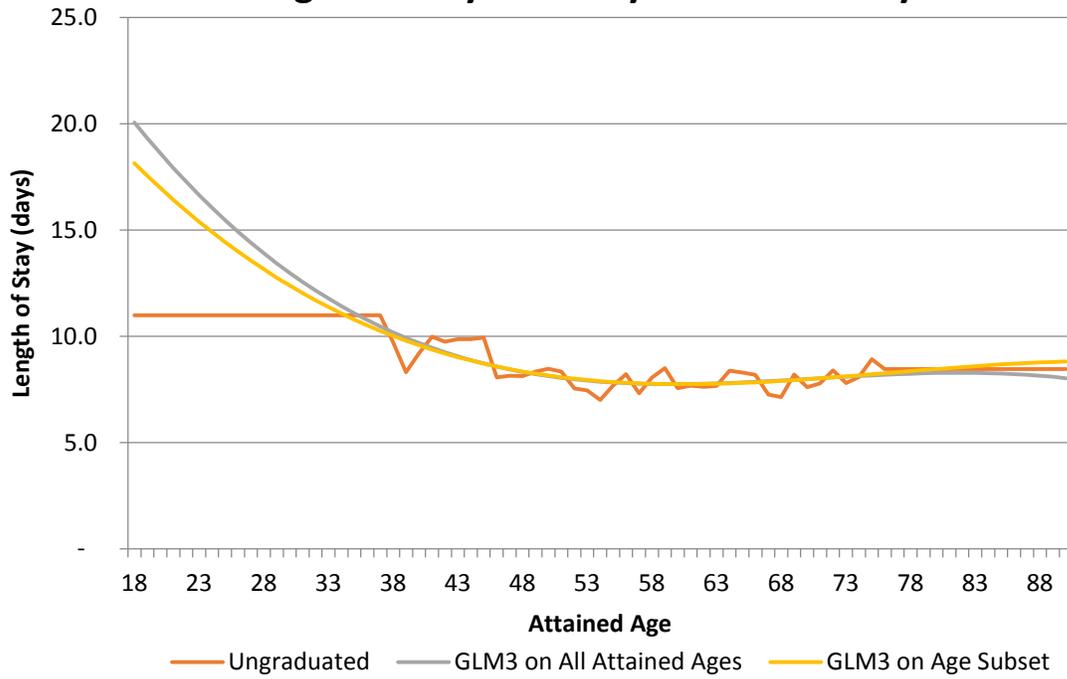
Figure 9—Female Hospitalization
Length of Stay Each Payment Summary
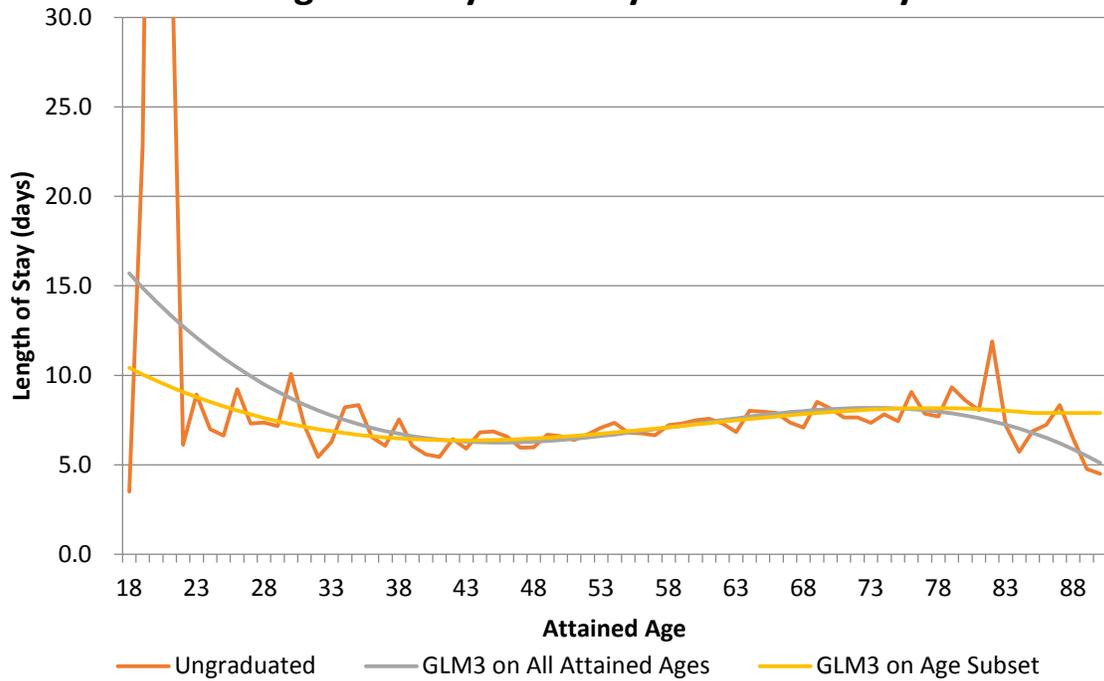
The claim cost graphs are the product of the incidence and length of stay rates. These graphs are detailed below.

Figure 10—Male Hospitalization Aggregate Claim Cost Each Payment Summary

Figure 11—Female Hospitalization Aggregate Claim Cost Each Payment Summary
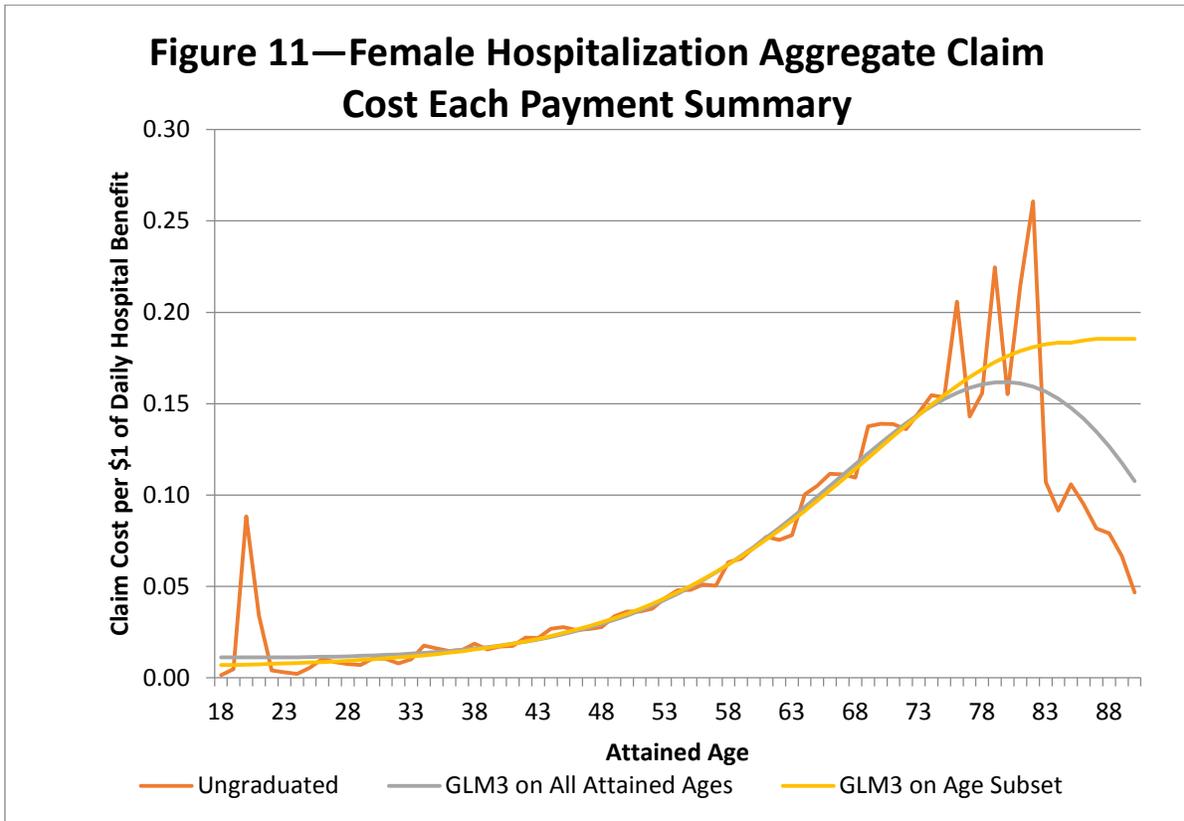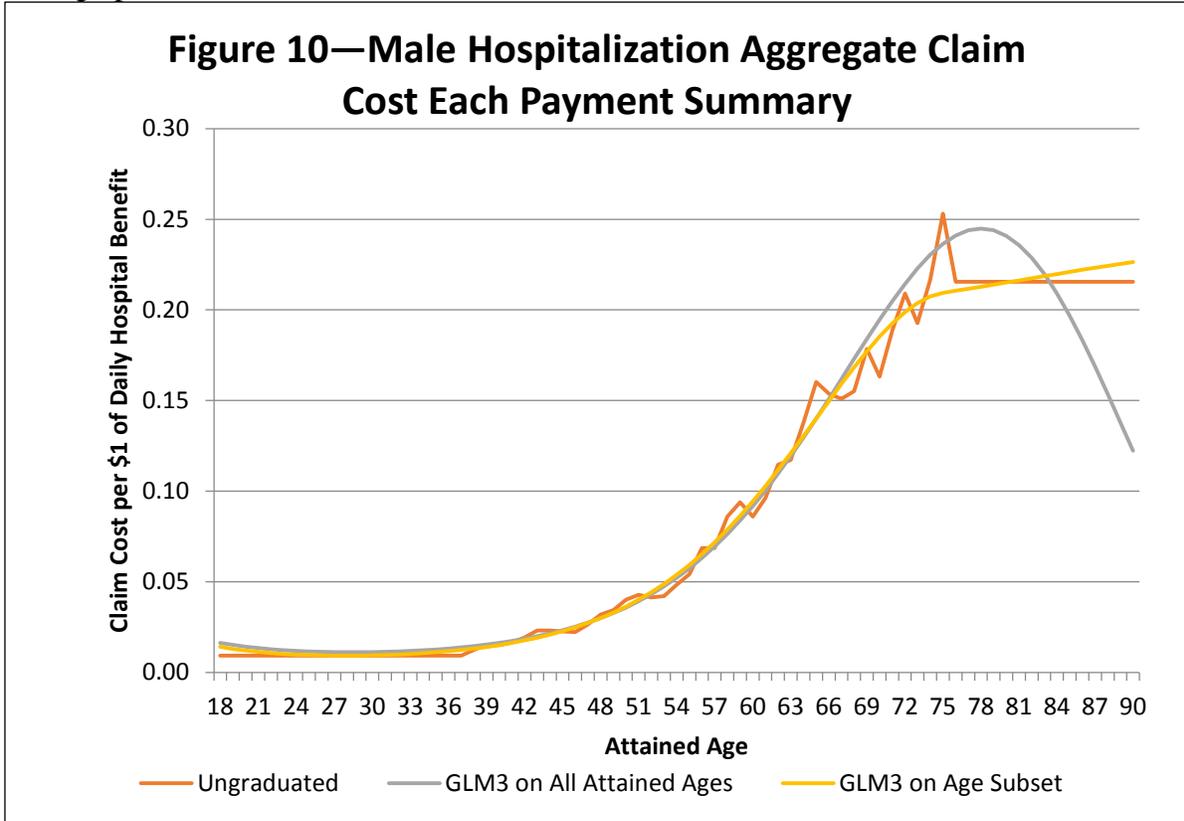
When reviewing the each payment hospitalization results, it should be noted that shock hospitalization claims (i.e., those with a length of stay longer than 30 days) were not excluded from the analysis.

C.   **All Payment Hospitalization**

As observed in the data discussed earlier in this report, hospital incidence on all payment basis for both males and females declined at older attained ages. There was no issue with the five companies requirement for the all payment data; therefore, no age aggregation occurred. The graphs below show the development of the graduated curves for all payment hospital incidence. The method of graduation was similar to that described for first occurrence and hospitalization each payment rates above. The graphs below show the result of this graduation method (initial data, GLM-3 graduation on all attained ages, and GLM-3 on age subset) for male and female all payment hospital incidence.

Figure 12—Male Hospitalization Incidence All Payment Rate Summary
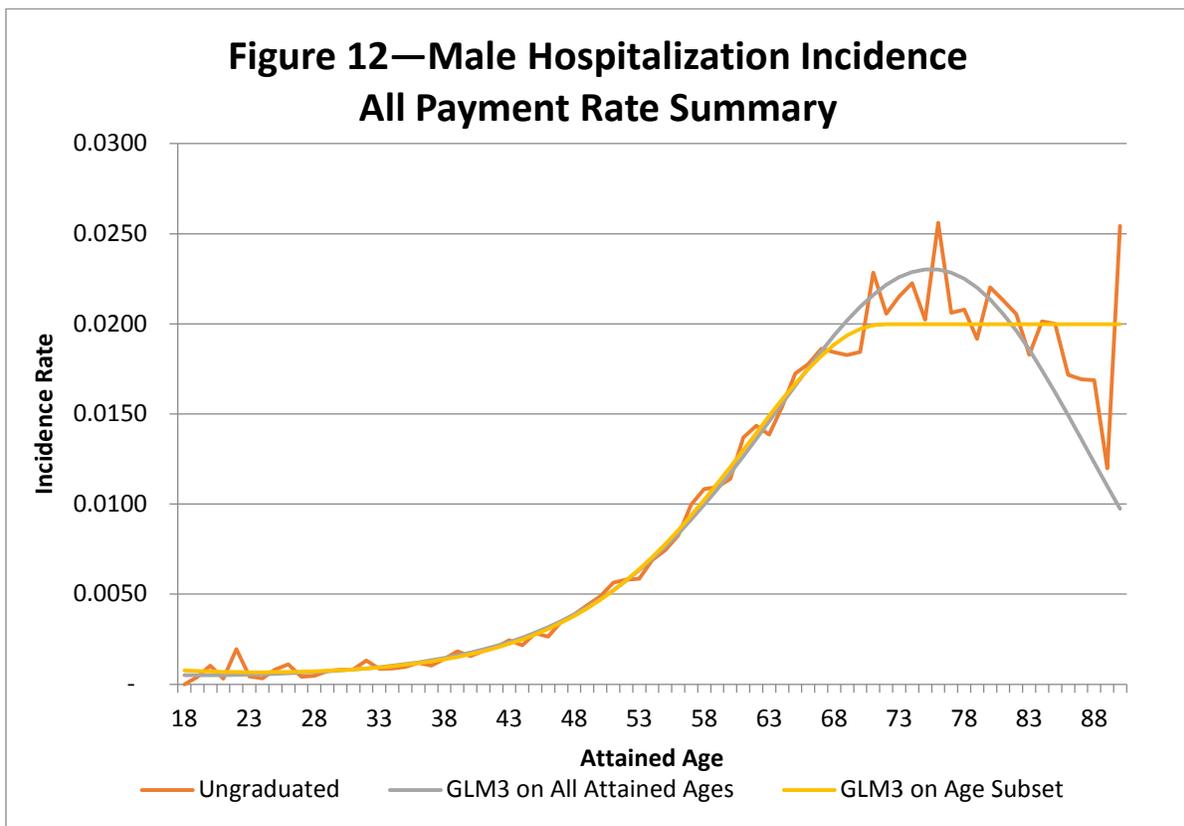
Figure 13—Female Hospitalization Incidence All Payment Rate Summary
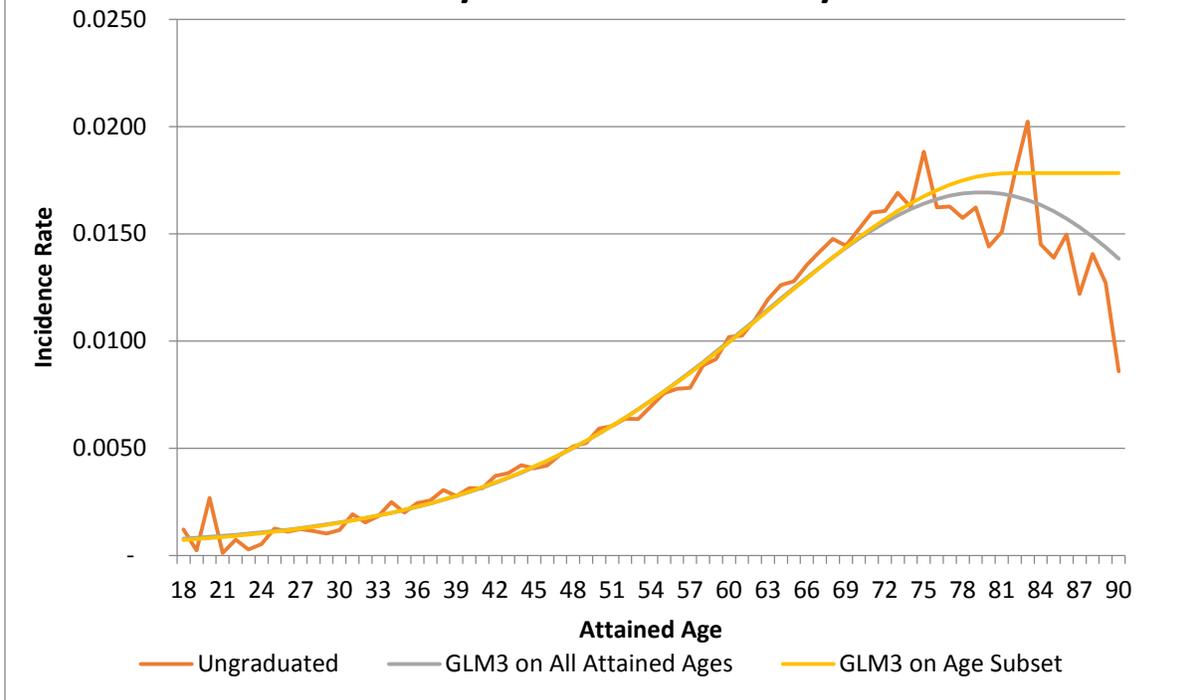
The all payment hospital length of stay exhibited similar characteristics as the female each payment length of stay. For the all payment length of stay data for both genders, the young attained ages stays were quite long. The work group discussed the general length of stay for the young attained ages with physicians who attributed it to treatment for blood cancers in young people. These treatment regimens cause long hospital stays. The stay for males age 19 was 220.9 days and the stay for females age 20 was 56.3 days in the initial data. The results for each age can be found in Appendix 2.

The method of graduation used for all payment length of stay was similar to that described for first occurrence rates. For male all payment length of stay, the GLM-3 with adjusted tail is the same as GLM-3 with unadjusted tail because the tail already exhibits a monotonically increasing nature. The graphs below show the result of this graduation method (initial data, GLM-3 graduation on all attained ages, and GLM-3 on age subset) for male and female all payment lengths of stay.

Figure 14—Male Hospital Length of Stay All Payment Summary
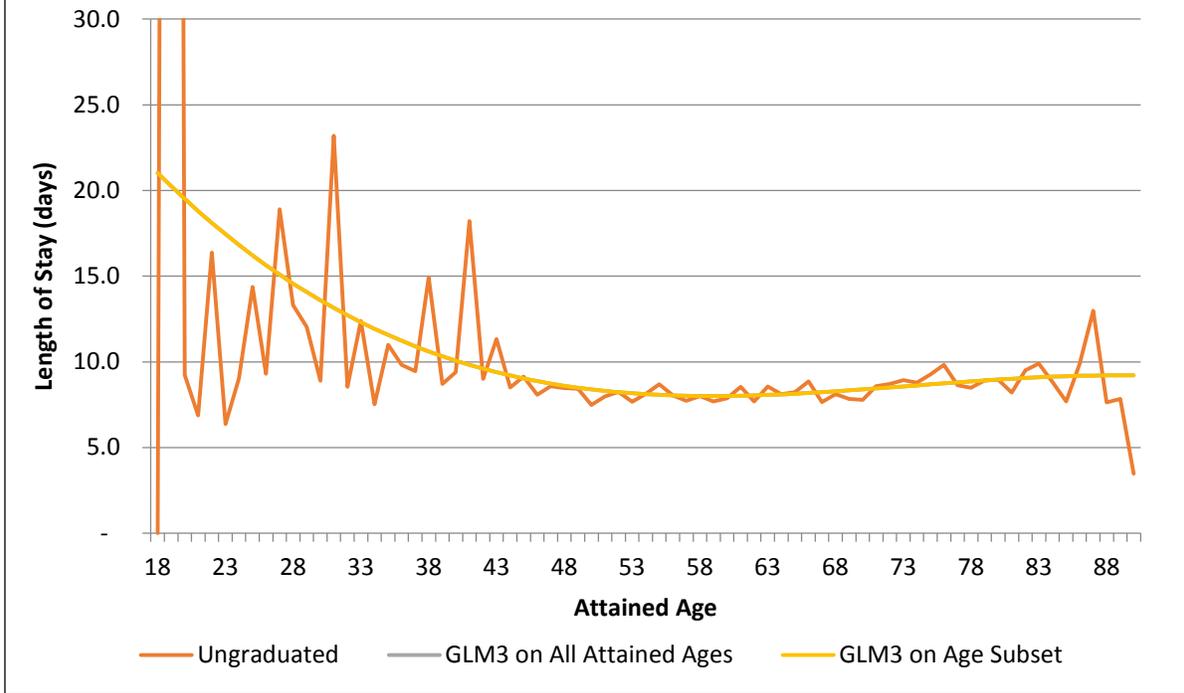
Figure 15—Female Hospital Length of Stay All Payment Summary
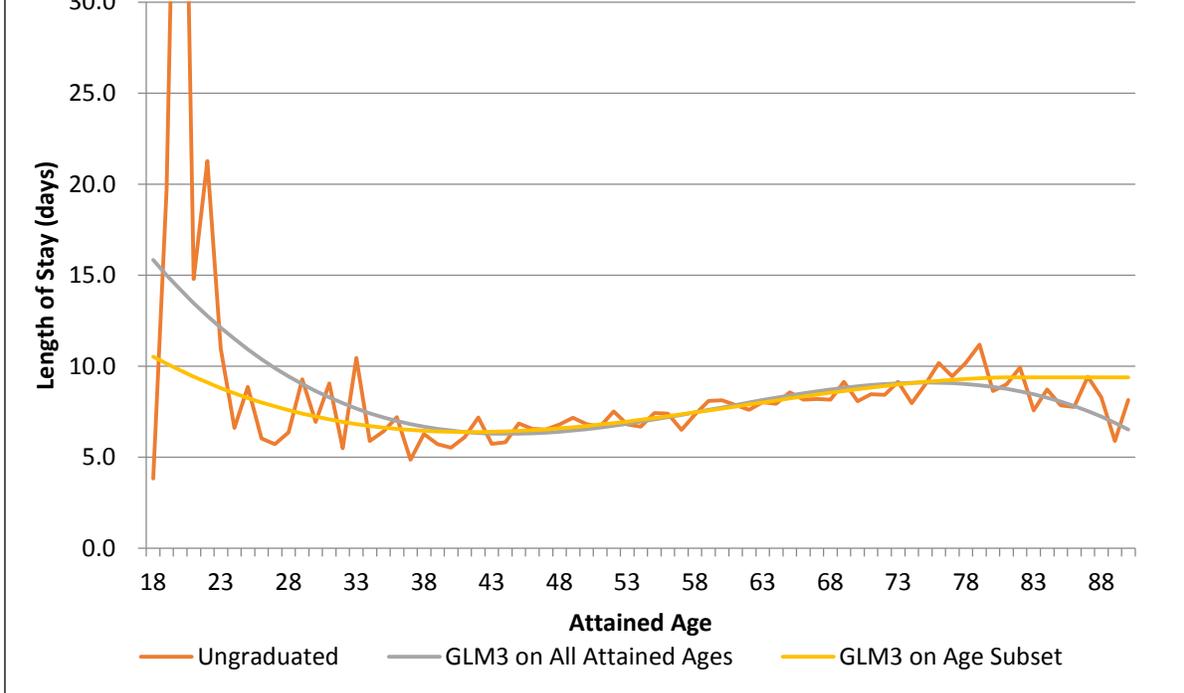
The claim cost graphs are the product of the incidence and length of stay rates. These graphs are detailed below.

Figure 16—Male Hospitalization All Payment Aggregate Claim Cost Summary

**Figure 17—Female Hospitalization Aggregate Claim Cost All Payment Rate Summary**
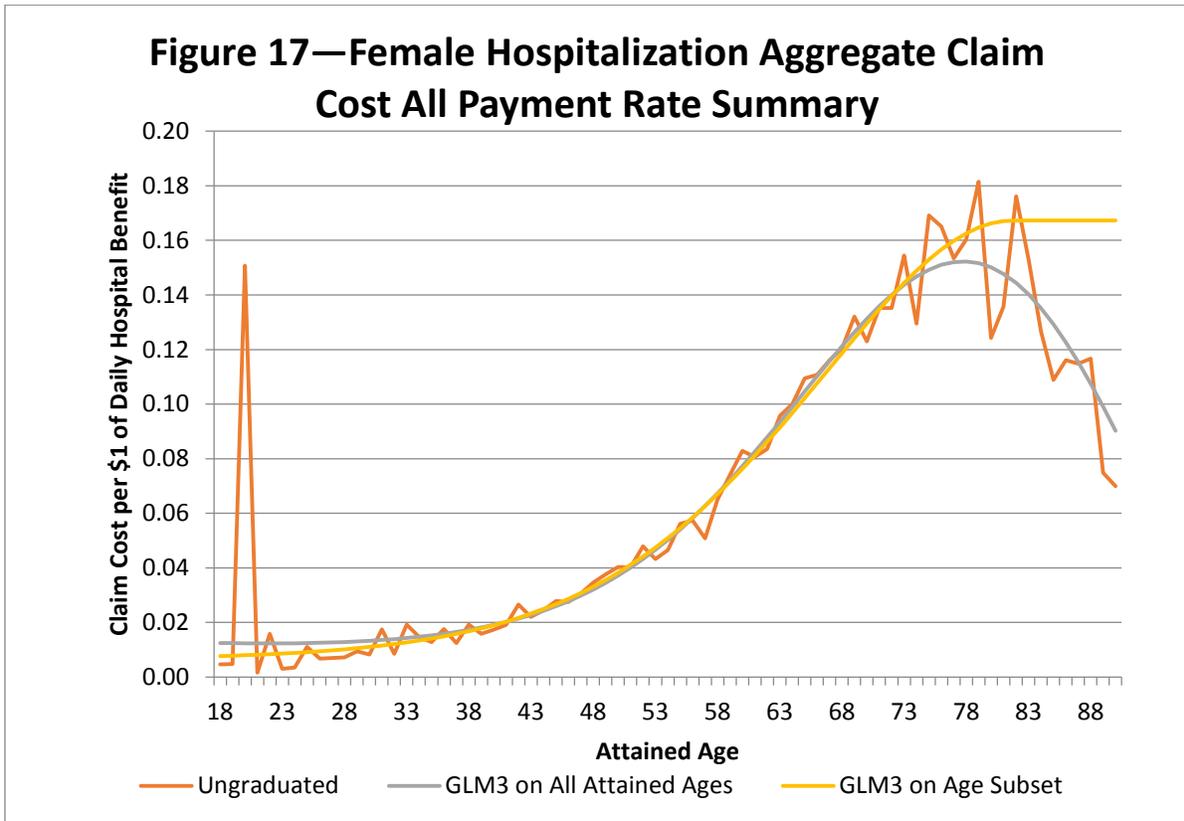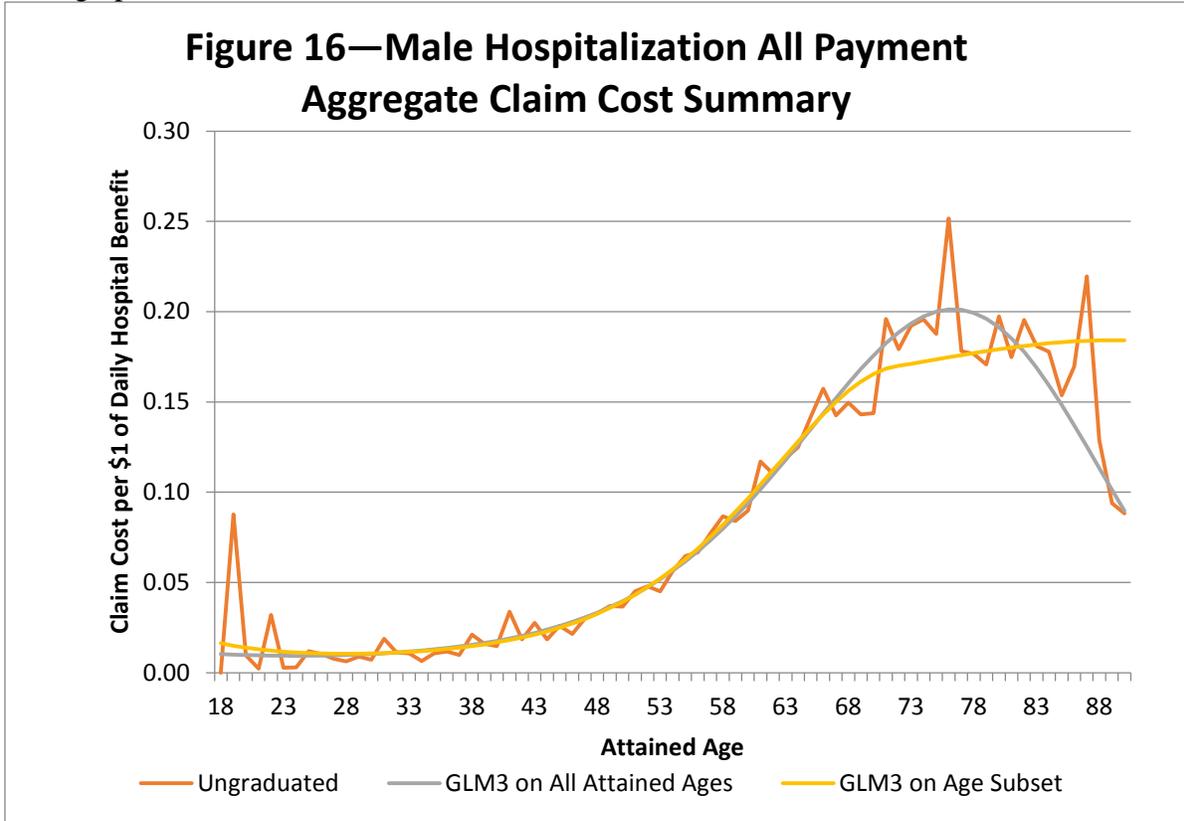
When reviewing the all payment hospitalization results, it should be noted that shock hospitalization claims (i.e. those with a length of stay longer than 30 days) were not excluded from the analysis.

Attained Ages Above 90

The data provided by Milliman stopped at age 90. The work group decided to extend the data to present a proposed valuation table with data through age 99. This is consistent with the 1985 cancer table construction. In order to extend the table, the rates for age 90 for each data element (first occurrence, hospitalization incidence all payment and each payment, and hospital length of stay all payment and each payment) were used as the values for attained ages 91-99. Actuarial judgment should be utilized where data is needed beyond age 99.

Final Basic Tables
The proposed basic tables approved by the work group have been included as Appendix 4.

VIII. Creation of the Loaded Valuation Tables

For statuatory conservatism, the work group developed separate loads to apply to each of the basic tables for cancer incidence, each payment hospitalization aggregate claim cost and all payment hospitalization aggregate claim cost. These loads were meant to cover the variation in individual company experience around the mean of the total aggregate experience. At the Fall, 2015 NAIC meeting, the work group proposed to HATF that the loads should be large enough to cover at least 80 percent of the contributing companies, and HATF accepted the work group's proposal.

Before loading, the experience underlying the basic tables varied significantly across the contributing companies. The actual-to-expected ratios by company ranged from 70 to 137 percent for cancer incidence, from 86 to 113 percent for each payment hospitalization aggregate claim cost, and from 82 to 119 percent for all payments hospitalization aggregate claim cost. Due to the large variances across companies, the loads developed by the work group needed to be large enough to cover some companies with actual-to-expected results well over 100 percent.

To attain the goal of covering at least 80 percent of the companies, a 15.35 percent load needed to be added to the basic incidence rate table for the first occurrence incidence rates. For the hospitalization aggregate claim cost experience, the committee looked at the expected number of days on claim separately for the each payment and all payment experience. The number of days on claim was determined from the hospitalization claim incidence and the hospitalization claim length of stay results. The analysis for each payment hospitalization aggregate claim cost resulted in an 8.68 percent load to the basic aggregate claim cost table and covered 80 percent of the contributing companies. The analysis for the all payment hospitalization aggregate claim cost resulted in a 7.35 percent

load to the basic aggregate claim cost table and covered 80 percent of the contributing companies.

After the loads for the aggregate claims costs for the all payment and each payment benefit types were determined, the loads for the incidence and length of stay rates were developed. The relationship between the aggregate cost load, the incidence load and the length of stay load is:

$$aggregate\ claim\ cost\ load$$
$$= [\,(1 + incidence\ load) * (1 + length\ of\ stay\ load)] - 1$$

Using the given aggregate claim cost load and an assumed load for incidence of 5 percent (same load for incidence in the 1985 cancer table), the load for length of stay rates can be determined using the following formula:

$$length\ of\ stay\ load = \frac{(aggregate\ claim\ cost\ load + 1)}{(1 + 0.05)} - 1$$

The resulting length of stay loads were:

	Aggregate	Incidence	Length of Stay
All Payment	7.35%	5.00%	2.238%
Each Payment	8.68%	5.00%	3.505%

The final, loaded 2016 cancer tables are shown in Appendix 5 and are produced by multiplying 1 plus the appropriate load from the above table and the applicable graduated incidence and length of stay rates from Appendix 4.

For example, for a male, age 35, the loaded rates are:

- Cancer incidence: 0.000871 x 1.1535 = 0.001005

- All Payment hospitalization aggregate claim cost: 0.012475 x 1.0735 = 0.013392

- Each Payment hospitalization aggregate claim cost: 0.011775 x 1.0868 = 0.012797

An additional analysis looked at the experience by age and by company to determine whether a load that varied by age would produce a more efficient coverage if the mix of business by age were to change in the future. The results of this analysis did not show a large variance of actual-to-expected loss ratios by age and confirmed the work group's decision to propose a level load across all ages.

IX. Claim Cost and Reserve Comparisons to the 1985 Cancer Tables

The work group analyzed the impact the proposed tables would have to claim costs and reserves. Below is a summary of the analysis that was conducted.

A.   **Claim Costs Comparison**

Figure 18 below shows the comparison of first occurrence rates for the 1985 and the proposed valuation tables.

Figure 18—First Occurrence Rate Comparison
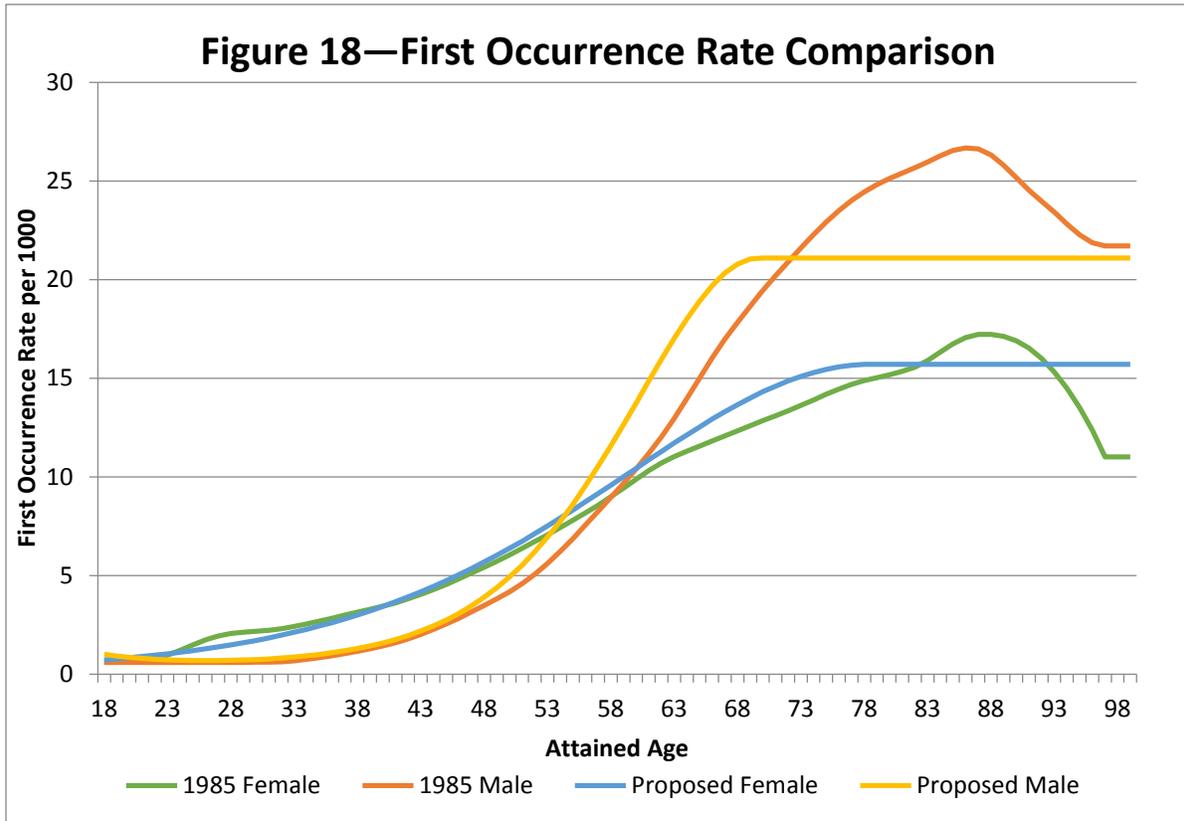
For the young attained ages, the two tables are very close. As the attained ages increase into the middle-age years, the proposed table first occurrence rates are higher. This higher pattern continues until attained ages in the 60s and 70s depending on gender. For older attained ages, the 1985 table shows higher rates. The 1985 table rates decrease in the attained ages 90-99. This area was held level in the current study through the work group's choice of graduation method.

Figure 19 below shows the each Payment hospitalization claim cost comparison for the 1985 and prposed tables.

Figure 19—Each Payment Hospitalization Claim Cost Comparison
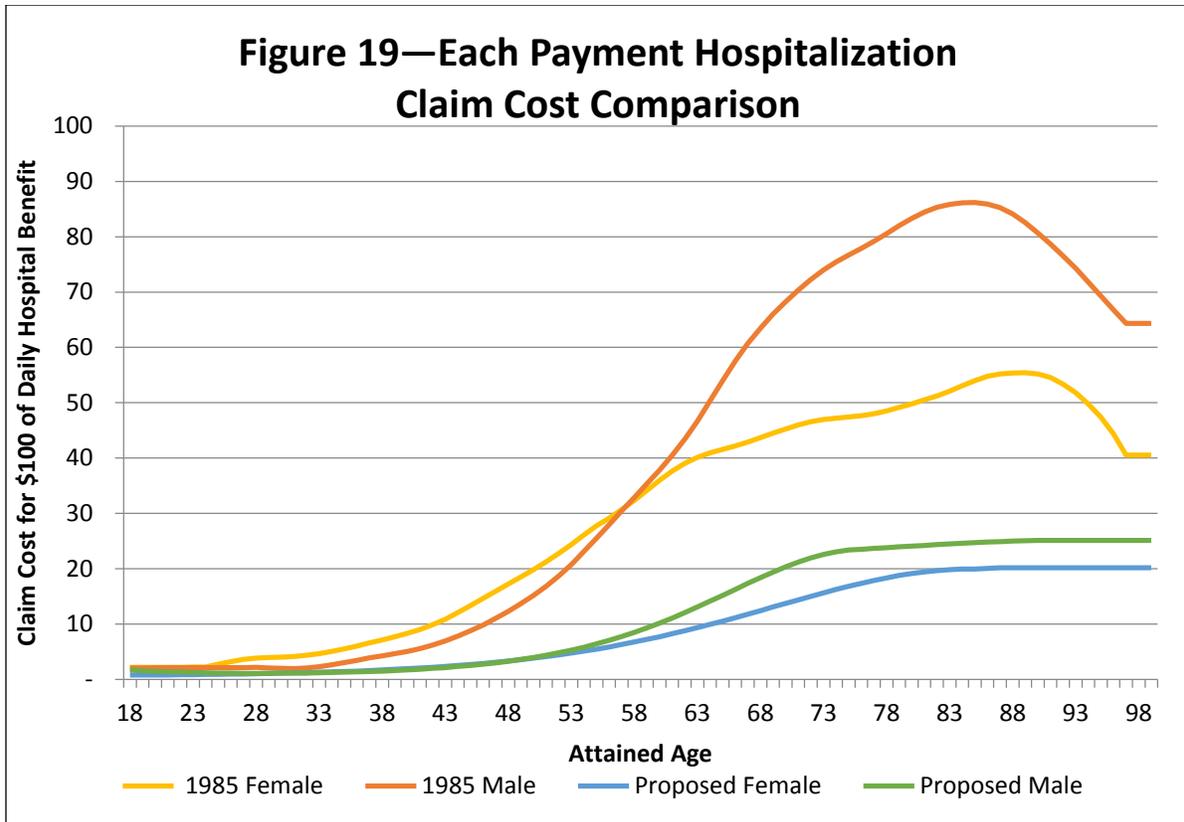
The 1985 claim costs are fairly close for the youngest ages but diverge for attained ages in the 20s and are significantly higher for all ages above 35. The work group believes that trends in all hospitalization stays are the most significant reason for the difference compounded by changes in cancer treatments that rely more heavily on outpatient treatment.

Figure 20 below shows the each payment hospitalization claim cost comparison for the 1985 and proposed tables.

Figure 20—All Payment Hospitalization Claim Cost Comparison
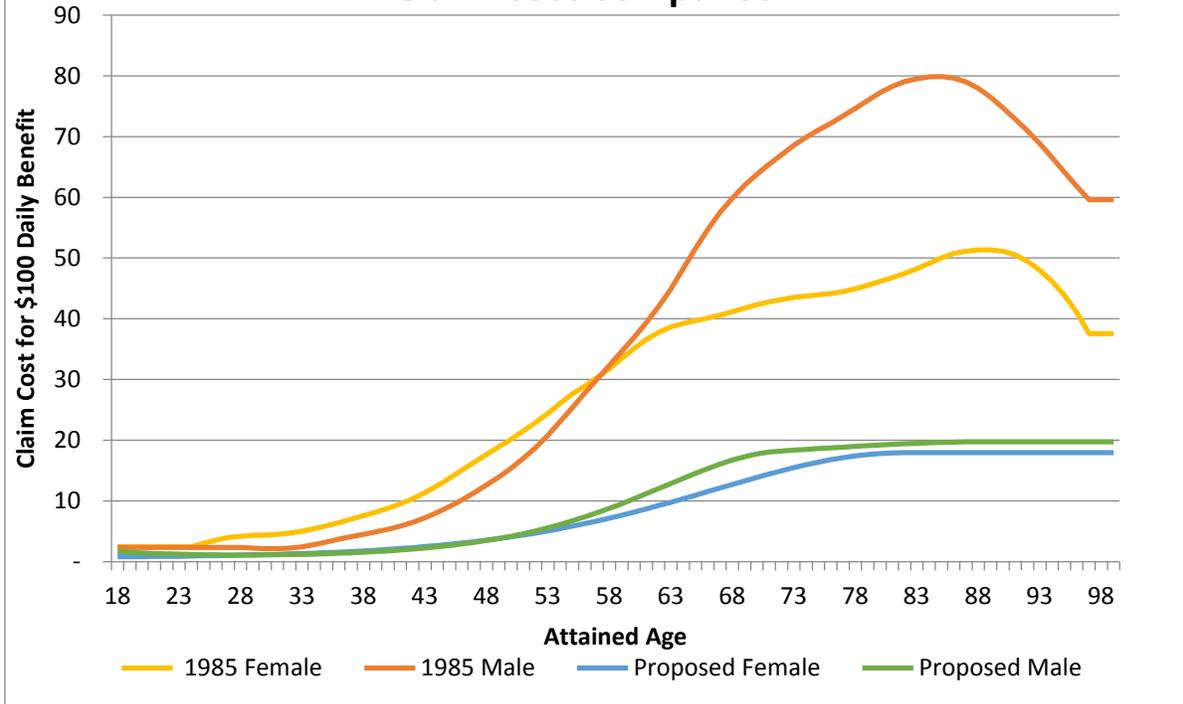
The all payment hospitalization claim costs largely follow the same pattern as each payment hospitalization. The 1985 table claim costs are significantly higher than those for the proposed table.

B.   Reserve Comparisons

The following graphs show comparisons of reserves for the first occurrence rates for the 1985 and proposed tables. The reserves are based on a $10,000 lump sum benefit upon occurrence of cancer. The lapse rates and interest are the same between calculations. Results are shown for ages 35, 45, and 55. Male and female reserve comparisons are shown in separate graphs.

Figure 21—Male First Occurrence Reserves
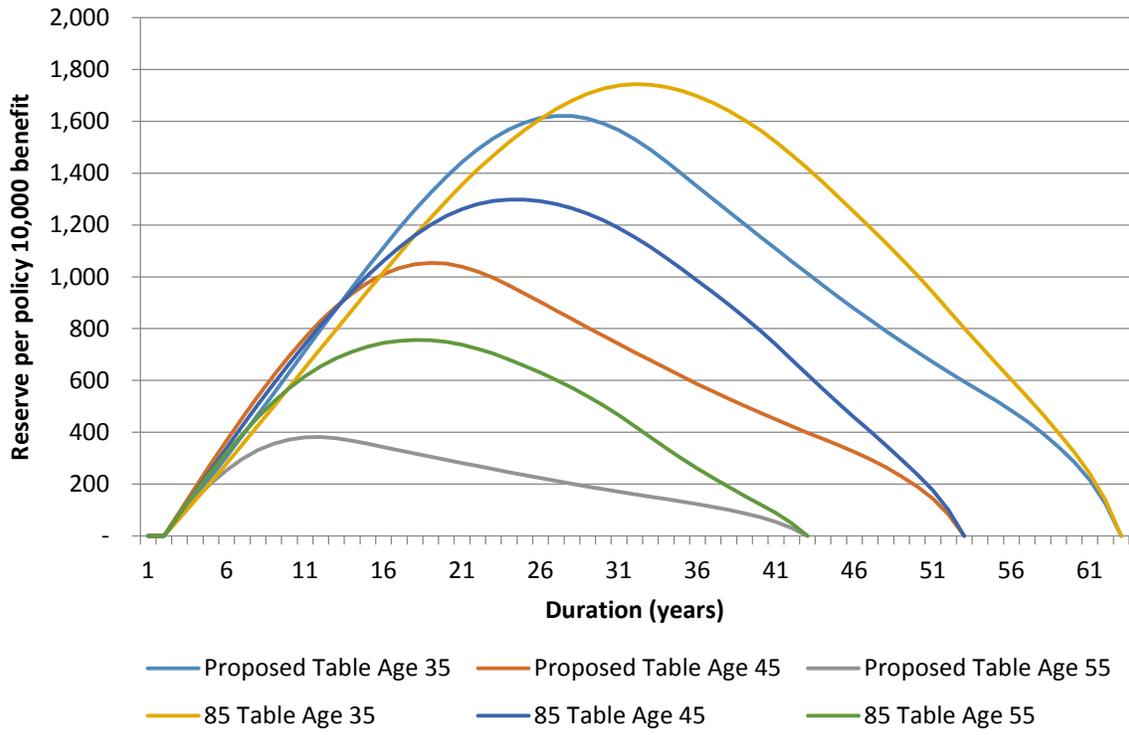
Figure 22—Female First Occurrence Reserves
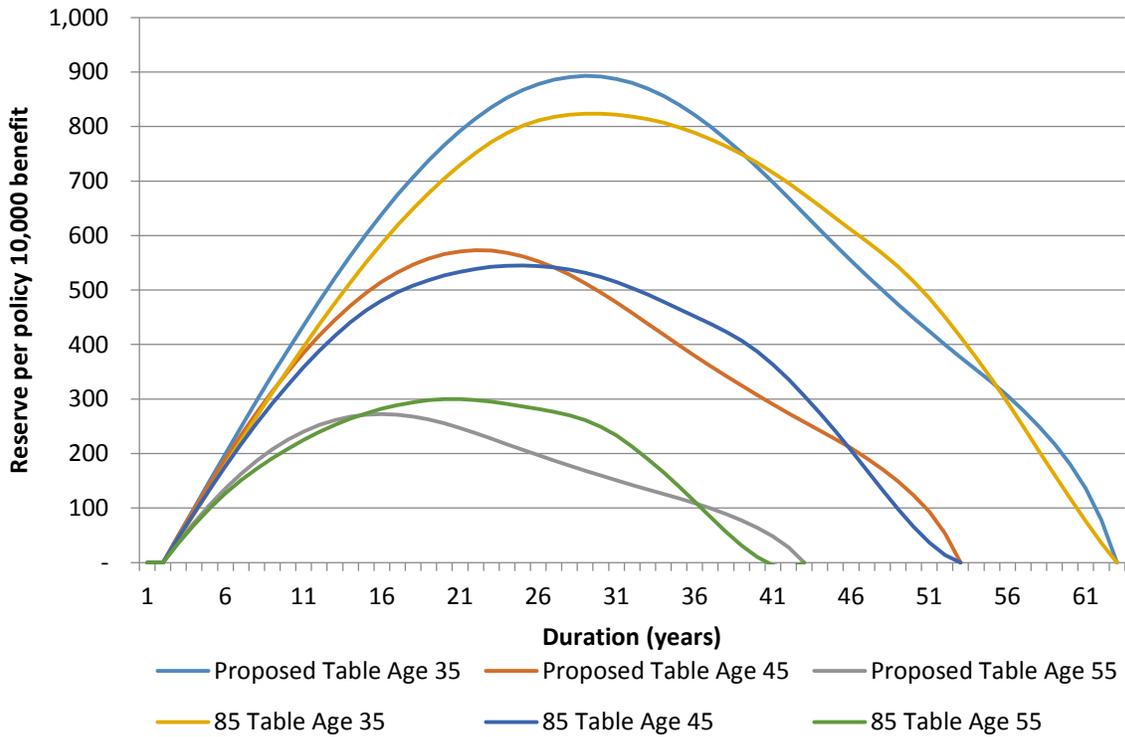
Male reserve calculations are similar for early durations but tend to peak lower and earlier than the reserves the 1985 table produced. This is a result of the higher and older age peak occurrence rates in the 1985 table and the flattening of older attained age occurrence rates in the proposed table. The female reserve calculations are more comparable between the 1985 and proposed tables. The proposed table reserves peak at levels slightly lower than 1985 table. The proposed table reserves tend to decrease from their peak at a faster rate than the 1985 table as well.

Figures showing reserve comparisons for the each payment hospitalization tables are below. The reserves are based on a $100 per day hospitalization benefit. The lapse rates and interest are the same between calculations. Results are shown for ages 35, 45, and 55. Male and female reserve comparisons are shown in separate graphs.

Figure 23—Male Each Payment Hospital Reserves

Figure 24—Female Each Payment Hospital Reserves
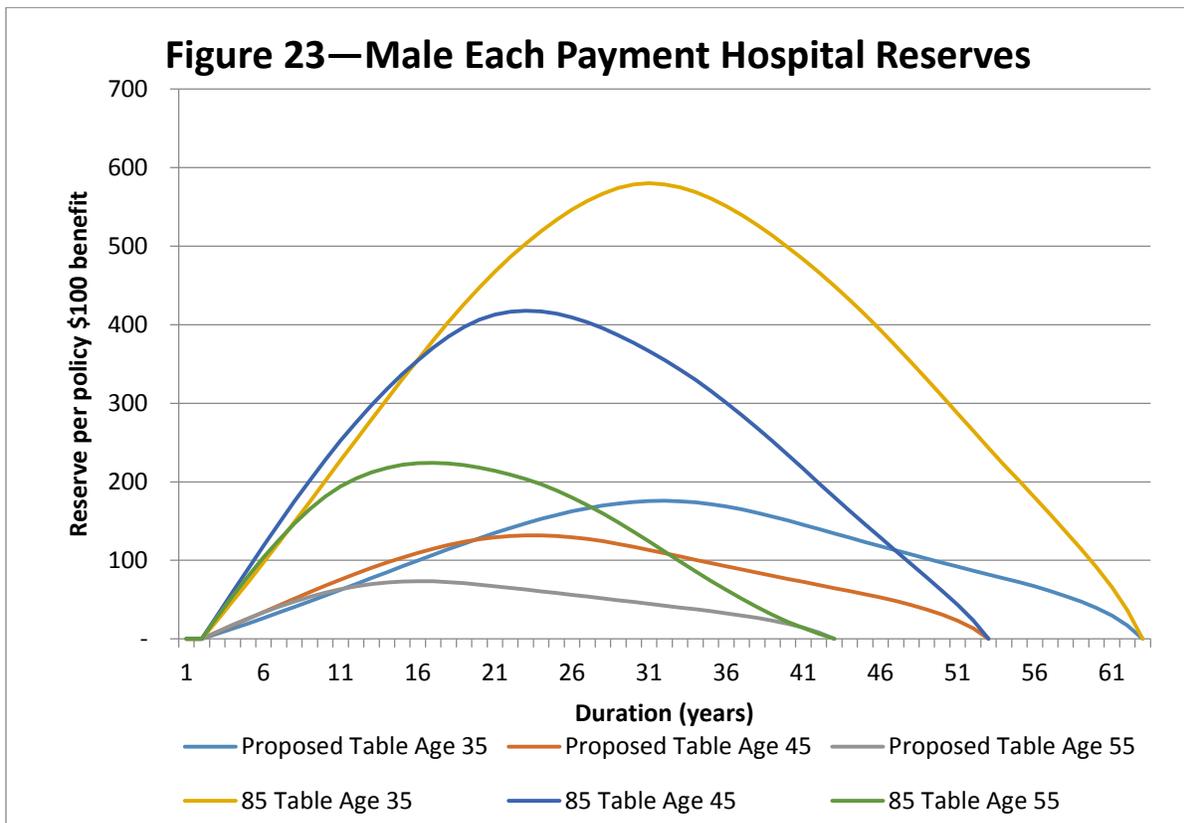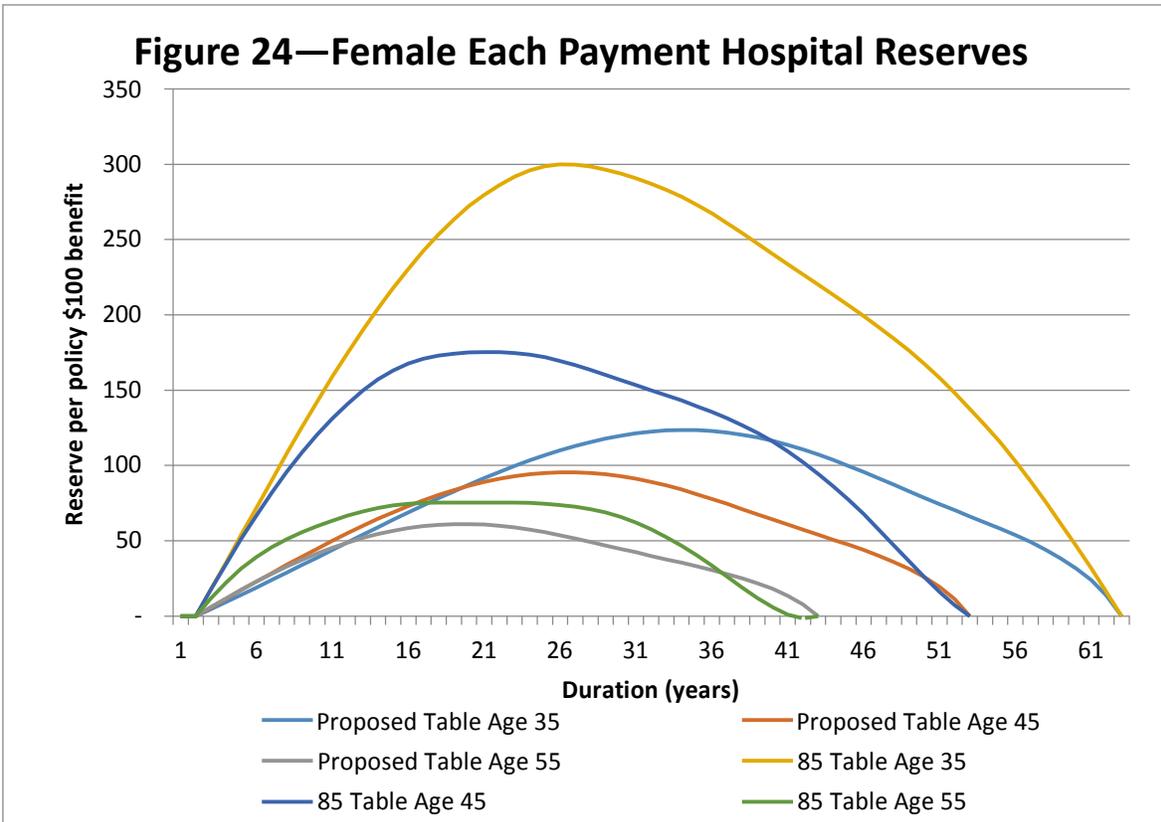
The reserves produced by the proposed table are significantly lower than those produced by the 1985 tables. The claim cost table comparisons shown above show a significant decrease between the two studies, resulting in the much lower reserve build-up using the proposed valuation table.

A comparison of all payment hospitalization reserve calculations are shown below. The reserves are based on a $100 per day hospitalization benefit. The lapse rates and interest are the same between calculations. Results are shown for ages 35, 45, and 55. Male and female reserve comparisons are shown in separate graphs.

Figure 25—Male All Payment Hospital Reserves
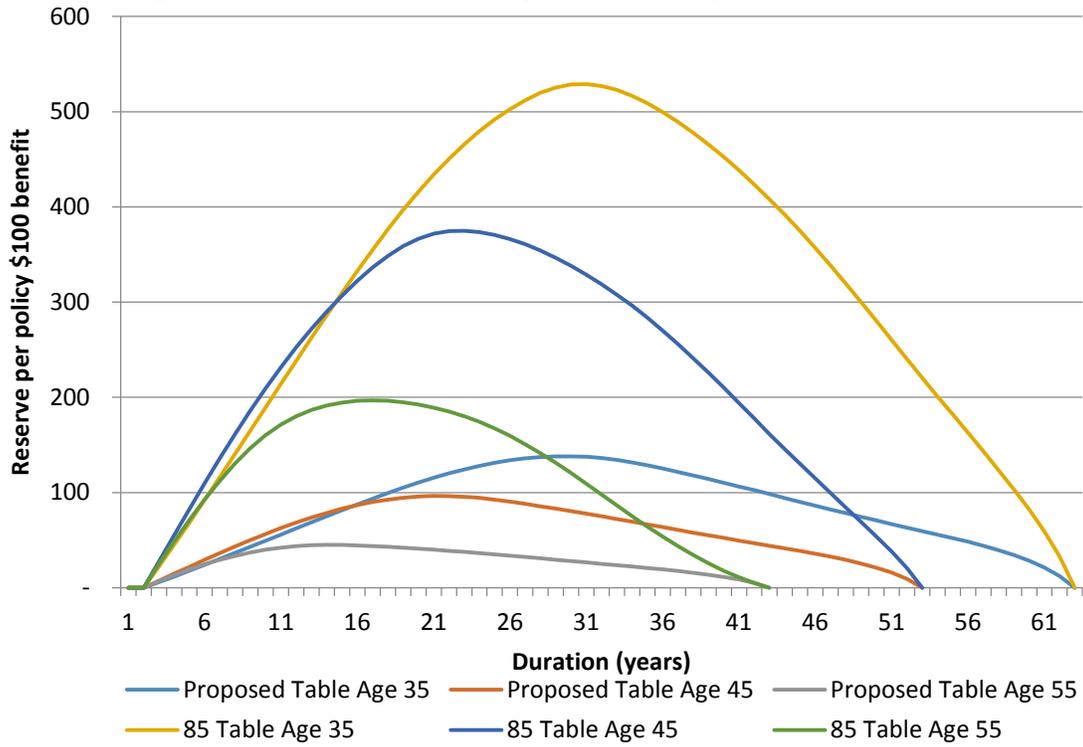
Figure 26—Female All Payment Hospital Reserves
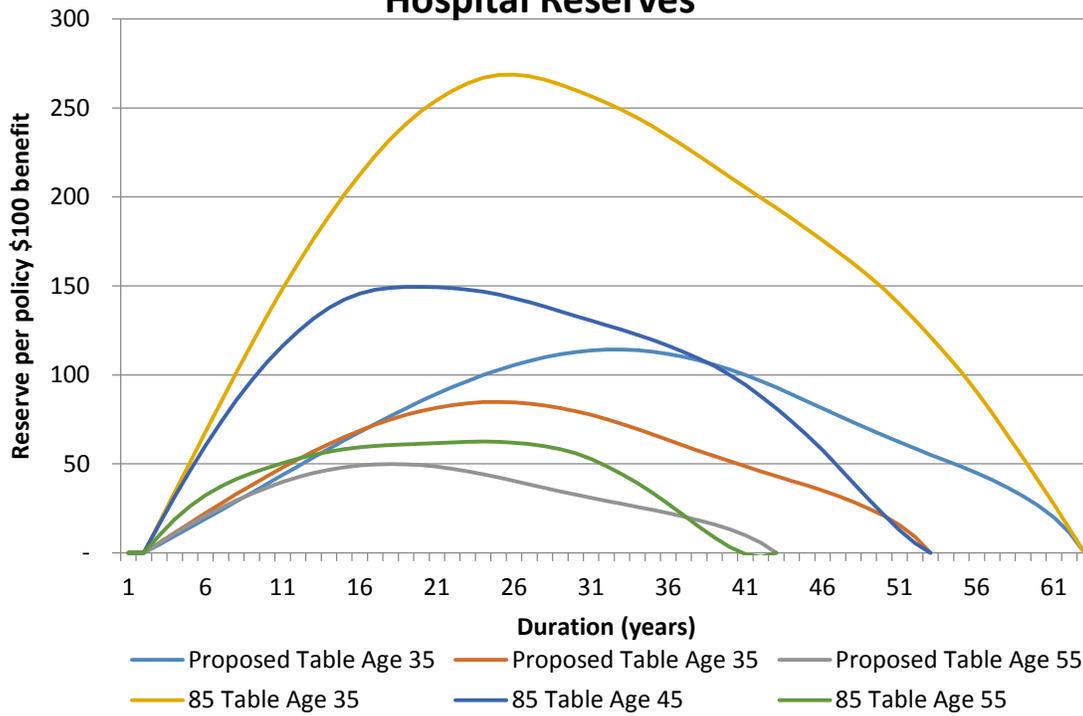
The all payment reserve patterns follow the each payment hospitalization closely but the peak reserves are lower for all payment versus each payment. This is consistent with the expectation that an each payment method will have higher future policy benefit reserves and an all payment method will have a higher claim reserve.

APPENDIX I

Society of Actuaries
Cancer Experience Study Data Requirements

General Information

The study includes experience for: (dates subject to change)
- Cancer insurance policies in the United States,
- Exposure from Jan. 1, 1994 to December 31, 2003,
- Claims incurred from Jan. 1, 1994 to December 31, 2003, and
- Claims paid through December 31, 2004 and incurred in claims incurral study period.
- The exposure and claims experience is to come from the same insurance experience.

Please submit exposure and claim information, gross of any reinsurance, on insureds and groups with coverage during any portion of these years. The committee will use the effective date and termination date to determine the exposure and claim rate calculations. To avoid double reporting of experience for reinsured/sold business, please include data for periods where the business was administered by your company. For example, if a block of business was sold by Company A to Company B on December 31, 1998 and administration was switched over on July 1, 1999, Company A would submit experience for the period from the beginning of the study period and paid through June 30, 1999. Company B would submit experience for the period paid from July 1, 1999 through the end of the study period.

Below is a request with a suggested format for 3 different files:

> Exposure Records
> Claim Records
> Policy Form Details

If you are unable to submit data in this format, please contact Jack Luff at the SOA office. The SOA and an outside data vendor will work with participants to be as accommodating as possible.

Definitions for Fields

See the explanation of data fields at the end of this document.

Control Totals / Additional Information Requested

Along with your contribution to be sent to the Compiler, please include control totals, consisting of the following:

- The number of Exposure records
- The number of Claim records
- Total $ amount of claims

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Also, please send to Jack Luff at the Society of Actuaries:

- A copy of the policy forms used, with benefit schedule, including for each policy form a reference to what policy form code is used to report its experience. If the Contributor has a significant number of policy forms, those that should be submitted are those with the most significant exposures or are most representative of the contributor's exposures. Also include with the policies a copy of the surgical schedule if applicable.

- A copy of the Contributor's claim incurral dating rules. Some examples are:

  - whether a company uses a diagnosis date or service date as the incurred date
  - rules to determine if a hospitalization is a continuation of a prior hospital stay or a new stay
  - rules for coding radiation/chemotherapy claims

- A description of anything believed to be unusual about the coverage provided to determine how best to record the experience for that product or group.
  Examples include:
  - Changes in claims-paying practices due to litigation
  - Group issued without underwriting

Method of Submission
The Committee would prefer contributions to be made via cartridges, diskette (size permitting) or CD ROM. If any of these are not practical, the contributor should contact Jack Luff at the SOA, or Sue Rynearson, Committee Chairperson, to determine an acceptable alternative arrangement. Contact the Compiler if any technical questions arise regarding the form of the contribution.

Privacy Protection
The SOA wants to inform all participating companies that the individual information submitted for every insured and claimant to this study will be protected from disclosure in compliance with all current laws and regulations. Additionally, company aggregate data will be kept confidential as to overall experience. Companies with a large proportion of the total experience will be scaled back to prevent this experience from dominating the study.

APPENDIX I

File #1 - Data Requirements for Insured Exposure

Primary Insured's Exposure Fields Description – Suggested Format

Field	Size	Start	End
Submitting Company Characteristics			
Submitting Company Code (assigned by SOA)	3	1	3
Original Writing Company Code (assigned by SOA)	3	4	6
Primary Insured Characteristics			
Policy Form Identification Code	7	7	13
Policyholder Identifier	12	14	25
Subgroup Code Identifier of subgroup or class	3	26	28
Issue Date YYYYMMDD	8	29	36
Effective Date YYYYMMDD	8	37	44
(= beg. date of study if inforce at beg. of study)			
Termination Date YYYYMMDD	8	45	52
(= end date of study if inforce at end of study)			
Primary Date of Birth YYYY MMDD	8	53	60
Primary Gender M=Male F=Female U=Unknown	1	61	61
Issue Channel W=Worksite O=Other U = Unknown	1	62	62
Issue State 2-character	2	63	64
Family Code I = Individual P=Primary & Spouse	1	65	65
S=One-parent Family F=Two-parent Family			
N=Family where only other choice is Individual O=Other U=Unknown			
Insured covered under a return of premium benefit? Y/N	1	66	66
Insured covered under a paid-up policy? Y/N	1	67	67
Policy Conversion? Y/N			

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Suggested Submission for changes to a policyholder's coverage:
Submit multiple records with different effective and termination dates.

Example: An individual converts coverage from policy form A1 to policy form A2 on July 1, 2000.

	Record 1	Record 2
Submitting company code	123	123
Original Writing Company Code	123	123
Policy form identification code	A1	A2
Policyholder identifier	CA123456	CA123456
Subgroup code identifier	2	2
Issue date	19990701	19990701
Effective date	19990701	20000701
Termination date	20000630	20010630
Primary Date of Birth	19620621	19620621
Primary Gender	F	F
Issue Channel	W	W
Issue State	NC	NC
Family Code	I	I
Insured covered ROP	N	N
Insured covered Paid-Up Policy	N	N
Policy conversion	N	Y

If the original issue date is not available, please put in conversion effective date.

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File #2 - Data Requirements for Claims

Claim Fields Description – Suggested Format

Field	Size	Start	End
Submitting Company Characteristics			
Submitting Company Code (assigned by SOA)	3	1	3
Original Writing Company Code (assigned by SOA)	3	4	6
Primary Insured Characteristics			
Policyholder Identifier	12	7	18
Claim Data			
Amount Paid (rounded to nearest whole $)	8	19	26
Diagnostic codes/Procedure codes	10	27	36
Benefit code/Benefit description **See List Below**	3	37	39
Date of initial diagnosis of cancer (first incurral date) YYYYMMDD	8	40	47
Incurred date YYYYMMDD	8	48	55
Date of payment YYYYMMDD	8	56	63
Days of hospitalization or number of treatments	4	64	67
Claimant age at time of claim	3	68	70
Claimant gender M=Male F=Female U=Unknown	1	71	71
Relationship code P=Primary S=Spouse C=Child U=Unknown	1	72	72

We only want claim information for the following benefits:

	Suggested benefit codes
Initial diagnosis/1st Occurrence of cancer	FOC
Hospitalization	HOS
Radiation	RAD
Chemotherapy	CHM
Blood or Plasma	BLD
Surgical Schedule	SUR
Prescription Drugs	DRG
Anti-Nausea/Side Effect Drugs	NAU
Immunotherapy	IMM

If Radiation and Chemotherapy are combined in your database, please use code RCM

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File #3 – Policy Form Details
Policy Form Identification Code
Number of family tiers
Does the form offer a ROP feature? Y/N
    If yes, is it optional? Y/N
Does the form offer a paid-up feature? Y/N
    If yes, is it optional? Y/N
Has the form ever been rerated? Y/N
Ratio of average current rate to original rate

Benefit Provisions
  Benefits Y/N
    Lump Sum/First Diagnosis Benefit
    Hospital Benefit
    Surgical Schedule
    Blood/Platelets/Plasma
    Prescription drugs
    Radiation and Chemotherapy
    Immunotherapy
  Benefit Type – ACT=Actual Charge RAC=Reasonable and Customary
              CAP = Actual Charge to Cap   IND = Fixed Indemnity
    Hospital Benefit
    Surgery Benefit
    Blood Benefit
    Drug Benefit
    Radiation and Chemotherapy
    Immunotherapy
  Daily Maximum per covered insured
    Hospital Benefit
    Surgery Benefit
    Blood Benefit
    Drug Benefit
    Radiation and Chemotherapy
    Immunotherapy
  Monthly Maximum per covered insured
    Hospital Benefit
    Surgery Benefit
    Blood Benefit
    Drug Benefit
    Radiation and Chemotherapy
    Immunotherapy
  Annual Maximum per covered insured
    Hospital Benefit
    Surgery Benefit
    Blood Benefit
    Drug Benefit

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    Radiation and Chemotherapy
    Immunotherapy
Lifetime Maximum per covered insured
    Hospital Benefit
    Surgery Benefit
    Blood Benefit
    Drug Benefit
    Radiation and Chemotherapy
    Immunotherapy

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Description of Data Fields

File #1 - Exposure

Submitting Company Code – (assigned by the SOA) This field is to be used to identify the company submitting the data. We would like to avoid double reporting of experience. If the business was sold or is being administered by another company, only the company administering the data records needs to submit the experience.

Original Writing Company Code – (assigned by the SOA) If available, this field will be used to identify the company that originally issued the policy.

Policy Form Identification Code – Code used to identify a separate cancer insurance form with differences in benefits, underwriting, or other features that might significantly affect experience. This code does not necessarily have to be the same as the policy form number used in product filings. It will be used to connect the exposure and claims experience with the policy so we can identify how policy features affect experience.

Policyholder Identifier – Code used to distinguish policyholders from each other. Does not necessarily need to be the same as the actual policyholder number used at your company.

Subgroup Code Identifier of subgroup or class – Use this code to distinguish blocks of business that have distinct underwriting, marketing, or other features that might affect claims experience.

Issue Date – The original issue date of this policy.

Effective Date – The beginning of the period of exposure for this record. If this is the first record for this policy, the effective date will be the later of issue date or the beginning of the study period. For subsequent records, the effective date will be the date that the change in coverage starts.

Termination Date – The end of the period of exposure for this record. The termination date will be the earlier of the last date of policy coverage and the end of the study period.

Primary Date of Birth - DOB of the primary insured, if available. Age at issue if DOB not available.

Primary gender – If this information is available, the gender of the primary insured.

Issue Channel – If this policy was issued to an individual, and the marketing method was to offer sales to multiple employees at their worksite, and the employer offers some type of assistance in collecting and remitting premiums for this policy, enter W for worksite.

Issue State – Use the standard 2 character abbreviations for the 50 states in the U.S., and please include a list of abbreviations used for other geographical entities.

Family Code – Distinguishes who is covered
        Suggested Codes: I = Individual   P = Primary & Spouse
                               S = One-parent Family   F = Two-parent Family   O = Other

Insured covered under a return of premium benefit? Y/N Include Y if the policyholder had a Return of Premium type benefit

Insured covered under a paid-up policy? Y/N Include Y if the policy was in a paid-up status.

Policy Conversion? Y/N Include Y if the policy was converted from another Cancer policy, with or without new underwriting

File #2 - Claims

Please include separate data records for distinct benefits, even if the benefits were paid in a single payment.

Some of these fields are the same as in the Exposure file and are used to match claims to exposure. The Policyholder Identifier will be used to get policy and policyholder information from the exposure records.

Amount Paid – Rounded to nearest $

Diagnostic codes/Procedure codes – An example would be the ICD-9 codes which can be used to specify the type of cancer.

Benefit code/Benefit description – Please include only claims for the benefits listed in the Claims File field description. Include other claims if unsure about classification and please include separate codes with descriptions sent with data.

Date of initial diagnosis of cancer – Include the date the claimant was first diagnosed with cancer even if this benefit payment was for a later treatment.

Incurred date – Include the incurred date as defined by your company. Please also include a description of your company's incurral-dating methods.

Date of payment – Date claim was paid.

Days of hospitalization or number of treatments – If the benefit was for hospitalization, include the number of days for which this payment was made. If the benefit was for radiation, chemotherapy, or other recurring or separate treatments, include the number of treatments for which this payment was made. For First Diagnosis of Cancer or other single occurrence benefits, you may leave blank.

Claimant age at time of claim – Please include the age of the person who received treatment, if available.

Claimant gender M=Male F=Female U=Unknown – Please include the gender of the person who received treatment, if available.

Relationship code P=Primary S=Spouse C=Child – Please include the relationship to the primary insured of the person who received treatment.

File #3 – **Policy Forms**
The purpose of this file is to contain policy form details. The Policy Form Identification Code is to be made up by each submitter for each policy form included in the data submitted. This simplifies the data records in the exposure and claims files because the policy form detail will not have to be included in each claim or exposure record. This file is expected to have far fewer records than the other files but the format is left open in order to provide the submitter with more flexibility in providing important benefit and other policy provision details.

Policy Form Identification Code – Assigned by submitting company. Used to match exposure and claim records to specific policy form details.

Number of family tiers – 2=Individual and 2-Parent Family options only
3=Individual, 2-Parent Family, and 1-Parent Family options
4=Individual, 2-Parent Family, 1-Parent Family, and 2-Adult options

Does the form offer a ROP feature? – Return of Premium or similar benefit

Does the form offer a paid-up feature? – Include yes if it possible to be in a paid-up status

Has the form ever been rerated? – Include yes if premium rates have been changed.

Ratio of average current rate to original rate – Cumulative effect of all rerates for this policy

APPENDIX I

We would like to receive the following information on each of the major benefits included in this study:

Benefits – The $ amount paid or paid-up-to for each of the following benefits. (If the amount payable is unlimited, leave blank and indicate in the next section, Benefit Type):
    Lump Sum/First Diagnosis Benefit
    Hospital Benefit
    Surgical Schedule
    Blood/Platelets/Plasma
    Prescription drugs
    Radiation and Chemotherapy
    Immunotherapy
Benefit Type – Identify the policy provision for determining the amount to be paid for each single incident of the major benefits included.

- ACT=Actual Charge – This is for benefits which pay unlimited benefits equal to the actual charge. Daily, Monthly, and other caps are to be entered in later sections.
- CAP = Actual Charge to Cap – Include this code if the benefit is actual charge but is capped per incident of this benefit. Daily, Monthly, and other caps are to be entered in later sections.
- IND = Fixed Indemnity – Include this code if the benefit is a fixed amount.

Please list the following caps for each of the major benefits. Some benefits will have multiple caps. For caps which do not apply, leave blank or enter 0(zero).

- Daily Maximum per covered insured
- Monthly Maximum per covered insured
- Annual Maximum per covered insured
- Lifetime Maximum per covered insured

Please also list any other policy provisions which might affect claim incidence or severity. The SOA and this Committee will make every reasonable effort to work with the Submitting Companies in order to include their experience in our study.

Appendix 2
First Occurence Study Data - Initial
Incidence Rates per 1,000
Females and Males

Age	Female			Male		
	Total Exposure	Total Incurral	Incidence	Total Exposure	Total Incurral	Incidence
18	3,470.55	3.6864	1.062190	3,260.58	-	-
19	9,670.73	2.1175	0.218958	8,883.40	3.7552	0.422722
20	17,461.11	13.0347	0.746500	15,185.10	12.0303	0.792243
21	26,768.42	13.8691	0.518115	21,856.81	9.5039	0.434824
22	40,424.04	25.5430	0.631877	29,734.49	16.1580	0.543408
23	56,786.29	44.1794	0.777995	39,031.49	18.8133	0.482003
24	73,625.32	62.3588	0.846975	48,334.72	28.4794	0.589212
25	90,660.83	96.7150	1.066778	58,050.88	40.9184	0.704870
26	106,299.08	110.7595	1.041961	67,032.14	27.6460	0.412430
27	121,304.64	165.8198	1.366970	76,116.69	47.4044	0.622786
28	135,702.60	149.3380	1.100480	85,597.27	55.2837	0.645858
29	151,968.25	200.5865	1.319924	95,713.75	68.8618	0.719456
30	168,655.82	217.0711	1.287065	106,679.07	83.8789	0.786273
31	185,421.05	346.2583	1.867416	117,693.37	76.1010	0.646604
32	202,217.95	327.8709	1.621374	128,541.02	125.1812	0.973862
33	218,944.97	417.6444	1.907531	139,948.50	122.4639	0.875064
34	238,378.54	450.9472	1.891727	151,513.98	99.7527	0.658373
35	260,901.35	505.1162	1.936043	164,573.60	126.1747	0.766677
36	281,365.83	592.2428	2.104885	176,517.39	169.6547	0.961122
37	303,774.60	747.3882	2.460338	191,141.28	220.1418	1.151723
38	328,014.44	845.1349	2.576517	205,549.43	235.8164	1.147249
39	353,717.60	1,023.1961	2.892692	221,461.16	257.9003	1.164540
40	379,638.69	1,181.0812	3.111066	236,669.11	301.6300	1.274480
41	404,179.48	1,277.2253	3.160045	251,628.21	383.8485	1.525459
42	430,098.46	1,472.4610	3.423544	267,501.90	492.0007	1.839242
43	458,035.76	1,706.7997	3.726346	284,057.03	475.6244	1.674398
44	486,292.84	1,902.9260	3.913128	301,679.48	652.0099	2.161267
45	508,690.62	2,110.4826	4.148853	312,410.85	689.5422	2.207165
46	524,081.80	2,289.4007	4.368403	319,123.91	826.8532	2.591010
47	538,884.22	2,613.3325	4.849525	325,452.63	957.9209	2.943350
48	552,931.02	2,751.3327	4.975906	330,697.71	1,109.4058	3.354743
49	566,988.43	2,864.1502	5.051514	335,837.68	1,352.9612	4.028616
50	572,435.24	3,194.5889	5.580699	335,623.20	1,479.4313	4.408013
51	574,159.96	3,464.5271	6.034080	333,508.12	1,713.7606	5.138587
52	572,429.93	3,499.1669	6.112830	330,564.10	1,754.8252	5.308578
53	569,531.14	3,549.9308	6.233076	327,708.57	1,963.1802	5.990628
54	559,914.41	3,694.2772	6.597932	321,181.60	2,140.6476	6.664914
55	539,675.74	3,842.1234	7.119318	308,789.12	2,296.7678	7.437982
56	514,902.48	3,906.7180	7.587297	294,512.86	2,363.6086	8.025485
57	491,321.29	3,792.0940	7.718155	281,972.74	2,635.1308	9.345339
58	466,203.57	3,889.9302	8.343845	268,468.69	2,769.3413	10.315323
59	437,593.23	3,785.0085	8.649605	254,041.47	2,725.1264	10.727093
60	405,141.77	3,814.6617	9.415622	237,127.48	2,740.0859	11.555328
61	367,437.40	3,558.7924	9.685439	216,952.65	2,848.0366	13.127457
62	327,465.99	3,266.5724	9.975303	193,688.32	2,602.9685	13.438954
63	289,443.52	3,041.6444	10.508594	172,584.22	2,561.7652	14.843566
64	253,719.71	2,696.0155	10.625960	154,200.00	2,346.0128	15.214091
65	215,393.78	2,369.6304	11.001388	132,459.42	2,289.7860	17.286698
66	186,043.01	2,159.9506	11.609953	115,080.00	1,980.5104	17.209858
67	160,366.40	1,852.5737	11.552131	99,738.86	1,757.1341	17.617347
68	139,138.52	1,675.7891	12.044034	86,573.84	1,503.6123	17.367976
69	122,265.59	1,363.1138	11.148793	75,887.67	1,448.9156	19.092899
70	104,493.22	1,294.1357	12.384877	64,365.41	1,193.4163	18.541268
71	88,687.65	1,087.8374	12.265940	54,189.22	1,003.2273	18.513410
72	76,145.24	906.7382	11.908009	46,179.98	872.5856	18.895322
73	66,230.91	756.4155	11.420884	39,918.66	871.1443	21.822985
74	58,017.34	765.9495	13.202080	34,728.95	758.8463	21.850539
75	49,944.04	654.2734	13.100130	29,429.35	522.6269	17.758695
76	43,146.01	548.1712	12.705026	25,068.94	479.1189	19.112051
77	37,830.85	474.7157	12.548375	21,541.99	411.4324	19.099090
78	33,297.26	403.3344	12.113141	18,640.96	354.7157	19.028832
79	29,372.32	388.3769	13.222549	16,235.97	247.7527	15.259494
80	25,403.10	367.9650	14.485044	13,771.47	250.1665	18.165560
81	21,963.40	268.4292	12.221658	11,551.00	174.3068	15.090188
82	18,925.45	281.2274	14.859746	9,775.70	175.4038	17.942833
83	15,977.61	209.9672	13.141339	8,044.39	156.8008	19.491949
84	13,397.67	155.8784	11.634739	6,504.14	95.9621	14.754003
85	11,078.22	191.1552	17.255050	5,198.74	84.6406	16.280974
86	8,923.84	110.9189	12.429509	4,009.56	56.2287	14.023650
87	7,155.32	68.4771	9.570098	3,089.29	56.5121	18.292911
88	5,578.23	75.9439	13.614335	2,313.84	80.9604	34.989648
89	4,219.88	39.2636	9.304444	1,666.97	70.2834	42.162370
90	3,114.62	2.1982	0.705784	1,192.38	7.8223	6.560208

Appendix 2
All Payment Hospitalization Data - Initial
Study Data - Females and Males

Age	Female					Male				
	Total Exposure	Total Incurral	Total Days	Incidence	Length of Stay	Total Exposure	Total Incurral	Total Days	Incidence	Length of Stay
18	3,427.90	4.1541	15.9080	0.001212	3.8294	3,173.87	-	-	-	-
19	9,577.67	2.3430	46.1908	0.000245	19.7143	8,650.12	3.4348	758.6998	0.000397	220.8880
20	17,158.52	45.9504	2,585.4570	0.002678	56.2662	14,793.87	15.2998	141.3594	0.001034	9.2393
21	26,157.36	2.9397	43.4416	0.000112	14.7778	21,154.08	6.6235	45.4763	0.000313	6.8659
22	39,491.86	29.3963	625.5306	0.000744	21.2792	28,667.21	56.1872	920.0308	0.001960	16.3744
23	55,308.81	15.4905	169.6571	0.000280	10.9523	37,557.88	16.1090	102.7266	0.000429	6.3770
24	71,710.26	38.5055	254.3095	0.000537	6.6045	46,319.91	15.1674	136.8717	0.000327	9.0241
25	88,279.92	110.7938	982.2768	0.001255	8.8658	55,728.30	46.0311	661.5416	0.000826	14.3716
26	103,692.57	115.9409	698.6840	0.001118	6.0262	64,368.28	71.1749	661.9042	0.001106	9.2997
27	118,581.12	146.2044	834.5864	0.001233	5.7084	72,964.58	29.7631	562.4771	0.000408	18.8985
28	132,769.01	151.2942	962.7431	0.001140	6.3634	81,820.70	38.3923	511.2339	0.000469	13.3160
29	149,158.56	152.1214	1,411.6006	0.001020	9.2794	91,294.94	67.3429	810.5713	0.000738	12.0365
30	165,840.81	196.9611	1,366.9243	0.001188	6.9401	101,315.79	81.6611	725.8625	0.000806	8.8887
31	182,866.30	353.3169	3,200.5659	0.001932	9.0586	111,644.70	90.8094	2,105.3816	0.000813	23.1846
32	200,089.38	309.8664	1,701.9327	0.001549	5.4925	121,605.96	160.5249	1,370.6483	0.001320	8.5385
33	216,987.17	399.8123	4,178.0770	0.001843	10.4501	132,085.42	113.5071	1,406.6841	0.000859	12.3929
34	236,648.86	589.6611	3,467.6032	0.002492	5.8807	142,827.83	124.2397	933.9163	0.000870	7.5171
35	258,871.11	518.8992	3,325.9945	0.002004	6.4097	154,807.85	149.7078	1,646.1394	0.000967	10.9957
36	278,762.22	683.3927	4,921.3441	0.002452	7.2013	164,872.20	195.6027	1,921.3210	0.001186	9.8226
37	301,207.88	772.1981	3,745.5372	0.002564	4.8505	177,707.11	185.1026	1,749.0787	0.001042	9.4492
38	324,986.98	992.9618	6,232.4496	0.003055	6.2766	190,455.92	268.5593	4,008.6590	0.001410	14.9265
39	350,289.01	971.3783	5,543.9862	0.002773	5.7073	204,274.37	372.5496	3,248.1049	0.001824	8.7186
40	376,006.10	1,184.5170	6,539.9615	0.003150	5.5212	217,797.36	341.7082	3,209.8191	0.001569	9.3935
41	400,327.98	1,255.5678	7,645.8503	0.003136	6.0896	231,168.10	428.5426	7,805.3508	0.001854	18.2137
42	427,030.00	1,582.6747	11,363.0958	0.003706	7.1797	245,371.48	503.1826	4,532.0810	0.002051	9.0068
43	455,933.12	1,750.3324	10,024.8989	0.003839	5.7274	260,101.46	635.8579	7,198.5415	0.002445	11.3210
44	485,686.78	2,047.4643	11,899.0830	0.004216	5.8116	276,438.20	598.9620	5,098.1767	0.002167	8.5117
45	509,380.46	2,070.9821	14,175.7937	0.004066	6.8450	285,994.32	812.7532	7,426.9195	0.002842	9.1380
46	525,396.08	2,206.1097	14,458.7342	0.004199	6.5540	291,325.20	770.7790	6,234.6028	0.002646	8.0887
47	541,034.82	2,543.4162	16,561.4909	0.004701	6.5115	296,621.24	1,031.7628	8,847.9672	0.003478	8.5756
48	556,467.48	2,835.1115	19,267.5893	0.005095	6.7961	301,447.69	1,170.2643	9,916.1927	0.003882	8.4735
49	571,141.17	2,997.8335	21,499.0557	0.005249	7.1715	306,580.95	1,345.0006	11,336.4941	0.004387	8.4286
50	578,136.82	3,423.6765	23,326.2590	0.005922	6.8132	307,286.80	1,502.0069	11,241.2438	0.004888	7.4841
51	580,599.40	3,501.8515	23,371.7027	0.006031	6.6741	305,496.87	1,721.6612	13,763.1165	0.005636	7.9941
52	579,460.09	3,694.1037	27,760.2247	0.006375	7.5147	303,323.75	1,760.2963	14,513.5712	0.005803	8.2450
53	576,525.26	3,665.8485	24,938.1984	0.006359	6.8028	301,344.40	1,766.3763	13,554.1588	0.005862	7.6734
54	568,162.45	3,960.8290	26,438.6472	0.006971	6.6750	297,136.03	2,049.1803	16,670.1273	0.006896	8.1350
55	549,058.69	4,152.4756	30,847.0527	0.007563	7.4286	287,846.51	2,139.9910	18,620.7305	0.007434	8.7013
56	523,411.38	4,066.4864	30,047.0036	0.007769	7.3889	275,440.27	2,276.6188	18,314.3002	0.008265	8.0445
57	497,575.13	3,893.1273	25,302.2052	0.007824	6.4992	264,317.64	2,633.3725	20,340.3734	0.009963	7.7241
58	470,163.61	4,169.2557	30,602.3413	0.008868	7.3400	252,426.53	2,732.2555	21,873.9592	0.010824	8.0058
59	439,094.78	4,020.1558	32,500.9062	0.009156	8.0845	239,679.14	2,619.8901	20,138.4432	0.010931	7.6868
60	403,564.19	4,114.4859	33,453.8023	0.010195	8.1307	224,037.29	2,554.4537	20,116.3876	0.011402	7.8750
61	361,961.44	3,710.0607	29,205.7883	0.010250	7.8721	205,067.35	2,806.9431	23,969.7630	0.013688	8.5395
62	318,344.39	3,501.7978	26,607.3475	0.011000	7.5982	183,144.96	2,625.8423	20,188.3883	0.014338	7.6883
63	276,734.71	3,306.7632	26,497.1634	0.011949	8.0130	162,624.23	2,253.2436	19,313.9179	0.013856	8.5716
64	237,431.19	2,993.6535	23,748.8100	0.012609	7.9331	144,054.48	2,219.3033	17,999.6637	0.015406	8.1105
65	196,631.15	2,515.6630	21,526.7423	0.012794	8.5571	122,228.97	2,107.3150	17,334.5617	0.017241	8.2259
66	165,112.38	2,237.8519	18,278.9928	0.013554	8.1681	104,925.16	1,865.4274	16,512.1286	0.017779	8.8517
67	137,908.03	1,956.3661	16,018.0897	0.014186	8.1877	89,533.49	1,667.0895	12,768.2101	0.018620	7.6590
68	114,819.47	1,695.2981	13,824.0604	0.014765	8.1544	76,178.88	1,403.8956	11,389.3081	0.018429	8.1126
69	96,404.85	1,392.6508	12,733.2474	0.014446	9.1432	65,311.39	1,192.7390	9,342.6622	0.018262	7.8329
70	80,098.20	1,218.9831	9,849.1599	0.015219	8.0798	55,264.46	1,019.4729	7,940.2624	0.018447	7.7886
71	65,636.41	1,050.0245	8,874.1018	0.015998	8.4513	45,889.84	1,048.3296	8,994.5989	0.022844	8.5799
72	53,933.57	866.0683	7,290.1934	0.016058	8.4176	38,079.64	782.8229	6,821.9896	0.020558	8.7146
73	45,099.25	762.4510	6,966.2414	0.016906	9.1366	31,910.92	686.5063	6,134.9742	0.021513	8.9365
74	38,342.33	622.9188	4,964.7284	0.016246	7.9701	27,256.36	606.8524	5,335.2227	0.022265	8.7916
75	33,073.62	622.6973	5,594.8367	0.018828	8.9848	23,201.20	469.3118	4,351.8543	0.020228	9.2728
76	29,206.92	473.9530	4,821.5823	0.016227	10.1731	20,103.07	514.7533	5,057.4025	0.025606	9.8249
77	26,375.74	429.1406	4,047.6819	0.016270	9.4321	17,737.71	365.5348	3,158.9771	0.020608	8.6421
78	24,279.83	382.0129	3,890.6005	0.015734	10.1845	15,686.25	326.1083	2,768.0301	0.020789	8.4881
79	22,434.21	364.0565	4,073.0161	0.016228	11.1879	13,947.60	267.2238	2,381.5632	0.019159	8.9122
80	20,519.98	295.6571	2,550.9842	0.014408	8.6282	12,419.27	273.4953	2,450.6162	0.022022	8.9604
81	18,653.82	281.4858	2,531.4096	0.015090	8.9930	10,939.31	233.0525	1,912.1610	0.021304	8.2048
82	16,935.85	300.7552	2,983.7101	0.017758	9.9207	9,630.75	197.7859	1,881.0526	0.020537	9.5106
83	15,158.41	306.7273	2,318.1836	0.020235	7.5578	8,243.85	150.7142	1,491.5916	0.018282	9.8968
84	13,295.33	192.8222	1,682.9106	0.014503	8.7278	6,911.99	139.1507	1,228.7679	0.020132	8.8305
85	11,495.05	159.5419	1,251.8081	0.013879	7.8463	5,774.60	115.4352	887.4630	0.019990	7.6880
86	9,744.16	145.8733	1,131.1294	0.014970	7.7542	4,743.91	81.4590	803.7370	0.017171	9.8668
87	7,920.57	96.5996	909.5316	0.012196	9.4155	3,783.33	64.0016	830.6488	0.016917	12.9786
88	6,205.90	87.2254	724.1403	0.014055	8.3019	2,860.72	48.2509	368.3179	0.016867	7.6334
89	4,704.90	59.8008	352.3420	0.012710	5.8919	2,061.74	24.6951	193.6964	0.011978	7.8435
90	3,385.79	29.0919	236.6932	0.008592	8.1361	1,458.54	37.0948	128.7979	0.025433	3.4721

Appendix 2
Each Payment Hospitalization Data - Initial
Study Data - Females

Age	Female				
	Total Exposure	Total Incurral	Total Days	Incidence	Length of Stay
18	2,935.20	1.2135	4.2471	0.000413	3.5000
19	8,892.71	1.8647	42.5766	0.000210	22.8333
20	16,395.85	18.1982	1,448.6849	0.001110	79.6058
21	25,392.04	22.1897	863.9507	0.000874	38.9348
22	38,956.15	26.2911	160.8479	0.000675	6.1180
23	55,181.32	18.8641	168.5141	0.000342	8.9330
24	71,917.14	22.8302	159.6892	0.000317	6.9947
25	88,831.52	73.9271	490.9589	0.000832	6.6411
26	104,508.96	117.2432	1,081.3627	0.001122	9.2232
27	119,493.84	140.7700	1,029.9710	0.001178	7.3167
28	133,729.51	136.1482	1,001.7816	0.001018	7.3580
29	149,993.35	146.2372	1,047.1479	0.000975	7.1606
30	166,507.32	176.5134	1,779.2302	0.001060	10.0799
31	183,281.08	263.9227	1,899.8382	0.001440	7.1985
32	200,376.01	288.8972	1,569.5418	0.001442	5.4329
33	217,113.29	350.9281	2,200.0933	0.001616	6.2694
34	236,550.41	508.0613	4,172.3190	0.002148	8.2122
35	258,573.98	501.0119	4,179.2606	0.001938	8.3416
36	278,065.13	623.5283	4,084.1619	0.002242	6.5501
37	300,175.96	752.2314	4,566.0469	0.002506	6.0700
38	323,306.72	802.6013	6,055.5477	0.002482	7.5449
39	347,669.52	894.8475	5,428.7831	0.002574	6.0667
40	372,241.33	1,139.3529	6,355.2882	0.003061	5.5780
41	395,714.47	1,272.6686	6,923.2315	0.003216	5.4399
42	421,487.40	1,444.4654	9,307.3627	0.003427	6.4435
43	448,946.81	1,665.9398	9,820.1857	0.003711	5.8947
44	476,320.17	1,885.9279	12,831.7825	0.003959	6.8040
45	501,988.51	2,022.7876	13,897.0030	0.004030	6.8702
46	519,639.47	2,068.4497	13,590.8501	0.003981	6.5705
47	536,697.44	2,405.3579	14,314.2511	0.004482	5.9510
48	553,014.78	2,570.1361	15,363.2661	0.004647	5.9776
49	568,753.91	2,862.4217	19,129.4255	0.005033	6.6830
50	576,496.06	3,174.6948	20,916.5339	0.005507	6.5885
51	579,514.16	3,291.3308	21,014.0971	0.005679	6.3847
52	578,687.93	3,265.1337	21,875.8778	0.005642	6.6998
53	574,996.74	3,544.2641	25,068.2554	0.006164	7.0729
54	565,325.53	3,694.4920	27,130.9081	0.006535	7.3436
55	546,946.50	3,885.8215	26,369.3582	0.007105	6.7860
56	521,562.35	3,944.0847	26,644.2612	0.007562	6.7555
57	495,826.83	3,762.8393	25,019.1537	0.007589	6.6490
58	468,293.66	4,100.8927	29,617.6313	0.008757	7.2222
59	436,907.18	3,897.6849	28,485.2594	0.008921	7.3083
60	400,955.05	3,811.0551	28,556.2135	0.009505	7.4930
61	358,854.90	3,654.3593	27,679.1526	0.010183	7.5743
62	314,067.18	3,244.9549	23,710.8990	0.010332	7.3070
63	270,943.40	3,093.2137	21,145.2037	0.011416	6.8360
64	230,525.07	2,882.5319	23,140.2154	0.012504	8.0277
65	190,755.94	2,516.3514	20,031.3298	0.013191	7.9605
66	159,766.63	2,260.2304	17,835.2981	0.014147	7.8909
67	133,320.56	2,018.9574	14,847.0648	0.015144	7.3538
68	110,762.71	1,713.9062	12,134.0925	0.015474	7.0798
69	92,795.91	1,500.5196	12,767.2593	0.016170	8.5086
70	76,713.80	1,310.0450	10,661.0488	0.017077	8.1379
71	62,230.58	1,130.2571	8,641.3522	0.018162	7.6455
72	50,318.70	895.1353	6,848.4405	0.017789	7.6507
73	40,966.40	809.3330	5,944.4061	0.019756	7.3448
74	33,390.79	659.4215	5,164.7754	0.019749	7.8323
75	27,231.54	562.0505	4,176.3080	0.020640	7.4305
76	22,466.40	510.3566	4,624.6885	0.022716	9.0617
77	18,818.11	342.3706	2,691.7110	0.018194	7.8620
78	15,979.48	323.3936	2,487.6418	0.020238	7.6923
79	13,734.74	330.8522	3,085.7193	0.024089	9.3266
80	11,726.19	211.2023	1,819.4405	0.018011	8.6147
81	9,975.62	265.7918	2,141.6222	0.026644	8.0575
82	8,573.65	188.0509	2,235.3598	0.021934	11.8870
83	7,364.10	110.0574	788.8450	0.014945	7.1676
84	6,257.14	99.8295	572.3304	0.015954	5.7331
85	5,260.16	80.9262	556.8512	0.015385	6.8810
86	4,409.59	57.8635	418.8772	0.013122	7.2391
87	3,619.37	35.4927	296.0970	0.009806	8.3425
88	2,882.51	35.2086	227.8645	0.012215	6.4718
89	2,208.10	30.8915	147.1334	0.013990	4.7629
90	1,644.61	17.0647	76.8417	0.010376	4.5030

Appendix 2
Each Payment Hospitalization Data - Initial
Study Data - Males

	Male				
Age	Total Exposure	Total Incurral	Total Days	Incidence	Length of Stay
18-37	1,582,065.85	1,324.0236	14,562.0220	0.000837	10.9983
38	183,713.77	235.1665	2,282.9619	0.001280	9.707852
39	196,634.91	353.4476	2,937.6472	0.001797	8.311408
40	209,158.34	342.3990	3,154.5558	0.001637	9.213097
41	221,479.56	364.6942	3,643.0654	0.001647	9.989369
42	234,531.57	461.3125	4,499.8006	0.001967	9.754343
43-44	507,539.61	1,186.8982	11,716.7487	0.002339	9.871739
45	271,642.70	616.9404	6,140.3346	0.002271	9.952882
46	278,546.51	769.5906	6,208.1434	0.002763	8.066813
47	284,850.38	925.4074	7,542.5357	0.003249	8.150503
48	290,557.37	1,138.0167	9,249.7540	0.003917	8.127960
49	296,504.33	1,219.1596	10,172.3689	0.004112	8.343755
50	297,911.17	1,411.1107	11,962.5158	0.004737	8.477376
51	296,976.28	1,525.2513	12,720.7792	0.005136	8.340120
52	295,187.32	1,619.1876	12,228.4229	0.005485	7.552196
53	292,799.40	1,650.3776	12,307.0214	0.005637	7.457094
54	287,580.96	1,983.8010	13,920.9197	0.006898	7.017296
55	279,186.91	1,968.5402	15,141.0917	0.007051	7.691533
56	267,240.60	2,226.8059	18,306.8001	0.008333	8.221103
57	256,501.17	2,401.2027	17,589.4154	0.009361	7.325252
58	244,876.98	2,611.7648	21,039.6982	0.010666	8.055740
59	232,361.27	2,561.5802	21,796.2827	0.011024	8.508921
60	216,966.02	2,466.7765	18,649.9900	0.011369	7.560470
61	198,111.61	2,487.1014	19,097.1407	0.012554	7.678473
62	176,034.21	2,647.2673	20,172.6603	0.015038	7.620183
63	155,042.63	2,369.1742	18,179.7460	0.015281	7.673453
64	135,956.80	2,232.2419	18,737.4698	0.016419	8.394014
65	115,594.70	2,232.5177	18,517.8943	0.019313	8.294624
66	99,261.76	1,862.7483	15,255.5357	0.018766	8.189800
67	84,707.99	1,757.1387	12,778.9964	0.020743	7.272617
68	72,036.89	1,564.0536	11,178.5069	0.021712	7.147138
69	61,752.31	1,344.1278	11,025.2404	0.021766	8.202524
70	52,111.38	1,117.6059	8,501.9847	0.021446	7.607319
71	43,003.44	1,041.8993	8,113.8375	0.024228	7.787545
72	35,319.25	879.1192	7,383.7749	0.024891	8.399060
73	29,012.99	715.8737	5,588.3125	0.024674	7.806282
74	24,005.77	642.2198	5,199.1476	0.026753	8.095589
75	19,597.49	555.1672	4,959.8845	0.028328	8.934037
76-90	88,692.77	2,258.2070	19,118.7146	0.025461	8.466325

Appendix 3
First Occurence Study Data - Raw
Observed Age Adjusted Selection Patterns

Duration	Selection
1	1.564662
2	1.427362
3	1.315744
4	1.276115
5+	1.000000

First Occurence Study Data - Basic
Incidence Rates per 1,000
Females and Males

Age	Female Incidence	Male Incidence
18	0.627924	0.881829
19	0.674180	0.801936
20	0.724071	0.739746
21	0.777858	0.691831
22	0.835817	0.655659
23	0.898239	0.629367
24	0.965428	0.611592
25	1.037702	0.601366
26	1.115394	0.598026
27	1.198850	0.601162
28	1.288427	0.610573
29	1.384493	0.626246
30	1.487428	0.648333
31	1.597617	0.677146
32	1.715454	0.713153
33	1.841334	0.756981
34	1.975655	0.809418
35	2.118813	0.871430
36	2.271195	0.944166
37	2.433181	1.028975
38	2.605137	1.127423
39	2.787408	1.241306
40	2.980315	1.372669
41	3.184147	1.523812
42	3.399157	1.697306
43	3.625555	1.895990
44	3.863497	2.122967
45	4.113083	2.381581
46	4.374345	2.675387
47	4.647242	3.008086
48	4.931649	3.383454
49	5.227351	3.805224
50	5.534035	4.276947
51	5.851280	4.801813
52	6.178553	5.382431
53	6.515203	6.020575
54	6.860448	6.716900
55	7.213380	7.470622
56	7.572952	8.279194
57	7.937985	9.137977
58	8.307156	10.039941
59	8.679009	10.975414
60	9.051950	11.931912
61	9.424257	12.894089
62	9.794084	13.843824
63	10.159468	14.760489
64	10.518346	15.621404
65	10.868563	16.402500
66	11.207892	17.079180
67	11.534048	17.627351
68	11.844714	18.024594
69	12.137560	18.251409
70	12.410266	18.292454
71	12.660551	18.292454
72	12.886202	18.292454
73	13.085094	18.292454
74	13.255229	18.292454
75	13.394756	18.292454
76	13.502005	18.292454
77	13.575509	18.292454
78	13.614037	18.292454
79	13.616610	18.292454
80	13.616610	18.292454
81	13.616610	18.292454
82	13.616610	18.292454
83	13.616610	18.292454
84	13.616610	18.292454
85	13.616610	18.292454
86	13.616610	18.292454
87	13.616610	18.292454
88	13.616610	18.292454
89	13.616610	18.292454
90	13.616610	18.292454
91	13.616610	18.292454
92	13.616610	18.292454
93	13.616610	18.292454
94	13.616610	18.292454
95	13.616610	18.292454
96	13.616610	18.292454
97	13.616610	18.292454
98	13.616610	18.292454
99	13.616610	18.292454

All Payment Hospitalization Data - Basic
Females and Males

	Female			Male		
Age	Incidence	Length of Stay	Claim Cost	Incidence	Length of Stay	Claim Cost
18	0.000730	10.525255	0.007678	0.000774	21.027235	0.016283
19	0.000772	10.134528	0.007821	0.000736	20.253152	0.014916
20	0.000817	9.766659	0.007983	0.000708	19.509006	0.013809
21	0.000867	9.421113	0.008165	0.000687	18.794249	0.012917
22	0.000920	9.097358	0.008369	0.000674	18.108335	0.012204
23	0.000977	8.794861	0.008597	0.000667	17.450718	0.011641
24	0.001039	8.513088	0.008849	0.000666	16.820850	0.011208
25	0.001106	8.251507	0.009129	0.000671	16.218185	0.010889
26	0.001179	8.009584	0.009440	0.000682	15.642176	0.010671
27	0.001256	7.786787	0.009782	0.000699	15.092276	0.010544
28	0.001340	7.582581	0.010161	0.000721	14.567939	0.010504
29	0.001430	7.396435	0.010578	0.000750	14.068618	0.010545
30	0.001527	7.227814	0.011038	0.000784	13.593766	0.010664
31	0.001631	7.076186	0.011544	0.000826	13.142837	0.010862
32	0.001744	6.941018	0.012102	0.000876	12.715283	0.011139
33	0.001864	6.821776	0.012715	0.000934	12.310558	0.011497
34	0.001993	6.717927	0.013389	0.001001	11.928116	0.011941
35	0.002131	6.628939	0.014129	0.001078	11.567409	0.012475
36	0.002280	6.554278	0.014942	0.001167	11.227891	0.013105
37	0.002439	6.493410	0.015835	0.001269	10.909015	0.013840
38	0.002608	6.445804	0.016813	0.001384	10.610234	0.014689
39	0.002790	6.410925	0.017884	0.001516	10.331002	0.015663
40	0.002983	6.388241	0.019056	0.001666	10.070772	0.016774
41	0.003189	6.377219	0.020337	0.001835	9.828997	0.018037
42	0.003408	6.377325	0.021736	0.002027	9.605130	0.019466
43	0.003641	6.388026	0.023262	0.002243	9.398625	0.021080
44	0.003889	6.408789	0.024922	0.002486	9.208935	0.022896
45	0.004151	6.439081	0.026728	0.002760	9.035514	0.024938
46	0.004428	6.478369	0.028687	0.003067	8.877814	0.027225
47	0.004721	6.526120	0.030808	0.003409	8.735288	0.029782
48	0.005029	6.581800	0.033102	0.003791	8.607391	0.032633
49	0.005354	6.644877	0.035576	0.004215	8.493575	0.035803
50	0.005695	6.714817	0.038239	0.004684	8.393294	0.039316
51	0.006052	6.791087	0.041098	0.005201	8.306001	0.043197
52	0.006425	6.873155	0.044160	0.005767	8.231148	0.047468
53	0.006814	6.960487	0.047430	0.006384	8.168191	0.052148
54	0.007219	7.052549	0.050912	0.007054	8.116581	0.057252
55	0.007639	7.148809	0.054609	0.007775	8.075772	0.062787
56	0.008073	7.248734	0.058521	0.008546	8.045217	0.068756
57	0.008521	7.351790	0.062646	0.009365	8.024369	0.075148
58	0.008982	7.457445	0.066980	0.010227	8.012683	0.081944
59	0.009454	7.565165	0.071518	0.011125	8.009610	0.089110
60	0.009935	7.674417	0.076248	0.012052	8.014605	0.096594
61	0.010425	7.784668	0.081158	0.012997	8.027121	0.104330
62	0.010922	7.895385	0.086232	0.013948	8.046610	0.112232
63	0.011422	8.006034	0.091449	0.014889	8.072527	0.120196
64	0.011925	8.116084	0.096785	0.015806	8.104324	0.128097
65	0.012427	8.225000	0.102214	0.016679	8.141455	0.135795
66	0.012926	8.332249	0.107704	0.017491	8.183372	0.143131
67	0.013419	8.437298	0.113219	0.018220	8.229530	0.149939
68	0.013902	8.539615	0.118721	0.018847	8.279381	0.156040
69	0.014373	8.638665	0.124168	0.019353	8.332380	0.161257
70	0.014829	8.733917	0.129513	0.019721	8.387978	0.165415
71	0.015265	8.824836	0.134709	0.019934	8.445630	0.168356
72	0.015678	8.910890	0.139705	0.019981	8.504788	0.169938
73	0.016065	8.991545	0.144448	0.019981	8.564906	0.171139
74	0.016422	9.066269	0.148887	0.019981	8.625437	0.172348
75	0.016746	9.134528	0.152966	0.019981	8.685835	0.173555
76	0.017033	9.195790	0.156634	0.019981	8.745552	0.174748
77	0.017281	9.249520	0.159839	0.019981	8.804042	0.175917
78	0.017486	9.295186	0.162531	0.019981	8.860759	0.177050
79	0.017645	9.332255	0.164666	0.019981	8.915155	0.178137
80	0.017756	9.360193	0.166201	0.019981	8.966684	0.179167
81	0.017818	9.378468	0.167102	0.019981	9.014799	0.180128
82	0.017827	9.386547	0.167337	0.019981	9.058953	0.181011
83	0.017827	9.386547	0.167337	0.019981	9.098600	0.181803
84	0.017827	9.386547	0.167337	0.019981	9.133192	0.182494
85	0.017827	9.386547	0.167337	0.019981	9.162184	0.183073
86	0.017827	9.386547	0.167337	0.019981	9.185028	0.183530
87	0.017827	9.386547	0.167337	0.019981	9.201178	0.183852
88	0.017827	9.386547	0.167337	0.019981	9.210087	0.184030
89	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053
90	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053
91	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053
92	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053
93	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053
94	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053
95	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053
96	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053
97	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053
98	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053
99	0.017827	9.386547	0.167337	0.019981	9.211208	0.184053

Each Payment Hospitalization Data - Basic
Females and Males

	Female			Male		
Age	Incidence	Length of Stay	Claim Cost	Incidence	Length of Stay	Claim Cost
18	0.000671	10.417035	0.006990	0.000858	18.148450	0.015564
19	0.000710	10.048067	0.007130	0.000814	17.555131	0.014287
20	0.000751	9.700279	0.007287	0.000780	16.983762	0.013248
21	0.000796	9.373157	0.007463	0.000755	16.433962	0.012406
22	0.000845	9.066186	0.007658	0.000737	15.905351	0.011727
23	0.000897	8.778853	0.007875	0.000727	15.397546	0.011189
24	0.000954	8.510642	0.008116	0.000722	14.910168	0.010770
25	0.001015	8.261040	0.008381	0.000724	14.442835	0.010458
26	0.001080	8.029532	0.008674	0.000732	13.995167	0.010239
27	0.001151	7.815604	0.008996	0.000745	13.566782	0.010107
28	0.001227	7.618742	0.009351	0.000764	13.157301	0.010054
29	0.001310	7.438431	0.009741	0.000789	12.766341	0.010077
30	0.001398	7.274156	0.010170	0.000821	12.393522	0.010173
31	0.001493	7.125404	0.010641	0.000859	12.038463	0.010341
32	0.001596	6.991660	0.011158	0.000904	11.700784	0.010583
33	0.001706	6.872411	0.011726	0.000958	11.380103	0.010900
34	0.001825	6.767140	0.012348	0.001020	11.076039	0.011296
35	0.001952	6.675335	0.013031	0.001091	10.788212	0.011775
36	0.002089	6.596480	0.013778	0.001174	10.516240	0.012342
37	0.002235	6.530062	0.014597	0.001268	10.259744	0.013005
38	0.002393	6.475567	0.015493	0.001375	10.018341	0.013773
39	0.002561	6.432479	0.016474	0.001497	9.791651	0.014655
40	0.002741	6.400284	0.017545	0.001635	9.579293	0.015663
41	0.002934	6.378469	0.018715	0.001792	9.380887	0.016810
42	0.003140	6.366518	0.019992	0.001969	9.196051	0.018110
43	0.003360	6.363918	0.021383	0.002170	9.024404	0.019581
44	0.003595	6.370154	0.022898	0.002396	8.865566	0.021240
45	0.003844	6.384712	0.024545	0.002650	8.719155	0.023108
46	0.004110	6.407078	0.026333	0.002936	8.584791	0.025208
47	0.004392	6.436736	0.028272	0.003257	8.462094	0.027562
48	0.004692	6.473173	0.030371	0.003616	8.350681	0.030197
49	0.005009	6.515875	0.032640	0.004017	8.250172	0.033140
50	0.005345	6.564327	0.035086	0.004463	8.160186	0.036420
51	0.005700	6.618015	0.037720	0.004958	8.080343	0.040066
52	0.006074	6.676424	0.040550	0.005506	8.010261	0.044108
53	0.006467	6.739040	0.043584	0.006110	7.949560	0.048574
54	0.006881	6.805349	0.046827	0.006773	7.897858	0.053494
55	0.007315	6.874837	0.050288	0.007497	7.854775	0.058891
56	0.007769	6.946988	0.053970	0.008285	7.819930	0.064787
57	0.008243	7.021290	0.057876	0.009136	7.792942	0.071198
58	0.008737	7.097226	0.062008	0.010051	7.773430	0.078132
59	0.009250	7.174284	0.066366	0.011028	7.761013	0.085590
60	0.009783	7.251949	0.070946	0.012064	7.755311	0.093558
61	0.010334	7.329706	0.075743	0.013153	7.755942	0.102012
62	0.010902	7.407041	0.080749	0.014288	7.762525	0.110910
63	0.011486	7.483440	0.085953	0.015460	7.774680	0.120195
64	0.012084	7.558388	0.091339	0.016657	7.792026	0.129790
65	0.012696	7.631372	0.096891	0.017865	7.814182	0.139597
66	0.013319	7.701876	0.102585	0.019067	7.840767	0.149497
67	0.013952	7.769386	0.108396	0.020245	7.871400	0.159353
68	0.014591	7.833389	0.114294	0.021378	7.905700	0.169006
69	0.015234	7.893369	0.120246	0.022444	7.943286	0.178281
70	0.015878	7.948813	0.126214	0.023421	7.983777	0.186990
71	0.016521	7.999206	0.132155	0.024285	8.026794	0.194934
72	0.017159	8.044034	0.138026	0.025014	8.071953	0.201911
73	0.017788	8.082782	0.143776	0.025585	8.118876	0.207724
74	0.018405	8.114936	0.149355	0.025980	8.167180	0.212184
75	0.019006	8.139982	0.154708	0.026182	8.216486	0.215121
76	0.019587	8.157405	0.159778	0.026182	8.266411	0.216428
77	0.020144	8.166691	0.164508	0.026182	8.316576	0.217742
78	0.020672	8.167326	0.168838	0.026182	8.366599	0.219051
79	0.021169	8.158795	0.172712	0.026182	8.416099	0.220347
80	0.021629	8.140585	0.176071	0.026182	8.464696	0.221620
81	0.022048	8.112180	0.178860	0.026182	8.512008	0.222858
82	0.022424	8.073066	0.181027	0.026182	8.557656	0.224054
83	0.022751	8.022730	0.182522	0.026182	8.601257	0.225195
84	0.023026	7.960656	0.183303	0.026182	8.642431	0.226273
85	0.023247	7.886330	0.183332	0.026182	8.680797	0.227278
86	0.023410	7.886330	0.184617	0.026182	8.715974	0.228199
87	0.023512	7.886330	0.185427	0.026182	8.747581	0.229026
88	0.023512	7.886330	0.185427	0.026182	8.775238	0.229750
89	0.023512	7.886330	0.185427	0.026182	8.798564	0.230361
90	0.023512	7.886330	0.185427	0.026182	8.817177	0.230848
91	0.023512	7.886330	0.185427	0.026182	8.817177	0.230848
92	0.023512	7.886330	0.185427	0.026182	8.817177	0.230848
93	0.023512	7.886330	0.185427	0.026182	8.817177	0.230848
94	0.023512	7.886330	0.185427	0.026182	8.817177	0.230848
95	0.023512	7.886330	0.185427	0.026182	8.817177	0.230848
96	0.023512	7.886330	0.185427	0.026182	8.817177	0.230848
97	0.023512	7.886330	0.185427	0.026182	8.817177	0.230848
98	0.023512	7.886330	0.185427	0.026182	8.817177	0.230848
99	0.023512	7.886330	0.185427	0.026182	8.817177	0.230848

First Occurence Study Data - Valuation
Incidence Rates per 1,000
Females and Males

Age	Female Incidence	Male Incidence
18	0.724310	1.017189
19	0.777667	0.925033
20	0.835216	0.853297
21	0.897260	0.798027
22	0.964115	0.756303
23	1.036119	0.725974
24	1.113621	0.705471
25	1.196989	0.693676
26	1.286607	0.689823
27	1.382873	0.693440
28	1.486200	0.704296
29	1.597013	0.722375
30	1.715748	0.747852
31	1.842852	0.781088
32	1.978776	0.822622
33	2.123979	0.873177
34	2.278919	0.933664
35	2.444050	1.005195
36	2.619823	1.089095
37	2.806675	1.186922
38	3.005026	1.300482
39	3.215275	1.431847
40	3.437793	1.583373
41	3.672913	1.757717
42	3.920928	1.957842
43	4.182077	2.187024
44	4.456544	2.448842
45	4.744441	2.747154
46	5.045807	3.086058
47	5.360594	3.469827
48	5.688657	3.902814
49	6.029749	4.389326
50	6.383509	4.933459
51	6.749451	5.538891
52	7.126961	6.208634
53	7.515286	6.944733
54	7.913527	7.747944
55	8.320633	8.617362
56	8.735401	9.550050
57	9.156465	10.540657
58	9.582304	11.581072
59	10.011236	12.660140
60	10.441424	13.763460
61	10.870881	14.873331
62	11.297476	15.968851
63	11.718947	17.026224
64	12.132912	18.019290
65	12.536888	18.920284
66	12.928303	19.700834
67	13.304525	20.333149
68	13.662878	20.791369
69	14.000675	21.053001
70	14.315241	21.100346
71	14.603946	21.100346
72	14.864234	21.100346
73	15.093656	21.100346
74	15.289907	21.100346
75	15.450851	21.100346
76	15.574562	21.100346
77	15.659350	21.100346
78	15.703792	21.100346
79	15.706760	21.100346
80	15.706760	21.100346
81	15.706760	21.100346
82	15.706760	21.100346
83	15.706760	21.100346
84	15.706760	21.100346
85	15.706760	21.100346
86	15.706760	21.100346
87	15.706760	21.100346
88	15.706760	21.100346
89	15.706760	21.100346
90	15.706760	21.100346
91	15.706760	21.100346
92	15.706760	21.100346
93	15.706760	21.100346
94	15.706760	21.100346
95	15.706760	21.100346
96	15.706760	21.100346
97	15.706760	21.100346
98	15.706760	21.100346
99	15.706760	21.100346

All Payment Hospitalization Data - Valuation
Females and Males

	Female			Male		
Age	Incidence	Length of Stay	Claim Cost	Incidence	Length of Stay	Claim Cost
18	0.000766	10.760820	0.008243	0.000813	21.497845	0.017480
19	0.000810	10.361348	0.008396	0.000773	20.706437	0.016012
20	0.000858	9.985246	0.008570	0.000743	19.945636	0.014824
21	0.000910	9.631966	0.008766	0.000722	19.214882	0.013867
22	0.000966	9.300966	0.008984	0.000708	18.513617	0.013100
23	0.001026	8.991698	0.009228	0.000700	17.841282	0.012497
24	0.001091	8.703619	0.009500	0.000700	17.197317	0.012032
25	0.001162	8.436184	0.009801	0.000705	16.581163	0.011689
26	0.001237	8.188846	0.010133	0.000716	15.992263	0.011455
27	0.001319	7.961063	0.010501	0.000734	15.430056	0.011319
28	0.001407	7.752286	0.010908	0.000757	14.893983	0.011276
29	0.001502	7.561974	0.011356	0.000787	14.383487	0.011320
30	0.001604	7.389579	0.011849	0.000824	13.898007	0.011448
31	0.001713	7.234558	0.012393	0.000868	13.436986	0.011660
32	0.001831	7.096365	0.012991	0.000920	12.999863	0.011958
33	0.001957	6.974454	0.013649	0.000981	12.586080	0.012342
34	0.002093	6.868281	0.014373	0.001051	12.195079	0.012819
35	0.002238	6.777301	0.015168	0.001132	11.826299	0.013392
36	0.002394	6.700969	0.016041	0.001226	11.479182	0.014068
37	0.002560	6.638739	0.016998	0.001332	11.153169	0.014858
38	0.002739	6.590067	0.018048	0.001454	10.847701	0.015769
39	0.002929	6.554408	0.019198	0.001592	10.562220	0.016815
40	0.003132	6.531216	0.020457	0.001749	10.296165	0.018007
41	0.003349	6.519947	0.021832	0.001927	10.048979	0.019362
42	0.003579	6.520056	0.023334	0.002128	9.820102	0.020897
43	0.003824	6.530996	0.024971	0.002355	9.608975	0.022629
44	0.004083	6.552224	0.026754	0.002611	9.415040	0.024579
45	0.004358	6.583194	0.028692	0.002898	9.237737	0.026770
46	0.004649	6.623361	0.030795	0.003220	9.076508	0.029226
47	0.004957	6.672181	0.033073	0.003580	8.930792	0.031971
48	0.005281	6.729107	0.035535	0.003981	8.800033	0.035031
49	0.005622	6.793596	0.038191	0.004426	8.683669	0.038434
50	0.005980	6.865101	0.041050	0.004918	8.581144	0.042206
51	0.006354	6.943078	0.044119	0.005461	8.491897	0.046372
52	0.006746	7.026983	0.047406	0.006055	8.415369	0.050957
53	0.007155	7.116269	0.050916	0.006704	8.351003	0.055981
54	0.007580	7.210392	0.054654	0.007406	8.298238	0.061460
55	0.008021	7.308806	0.058622	0.008163	8.256515	0.067402
56	0.008477	7.410968	0.062822	0.008973	8.225277	0.073809
57	0.008947	7.516330	0.067250	0.009833	8.203962	0.080672
58	0.009431	7.624350	0.071904	0.010738	8.192014	0.087967
59	0.009926	7.734481	0.076774	0.011682	8.188873	0.095659
60	0.010432	7.846178	0.081852	0.012655	8.193979	0.103693
61	0.010947	7.958896	0.087123	0.013647	8.206776	0.111998
62	0.011468	8.072091	0.092570	0.014645	8.226701	0.120481
63	0.011994	8.185217	0.098170	0.015634	8.253198	0.129030
64	0.012521	8.297730	0.103899	0.016596	8.285706	0.137512
65	0.013049	8.409083	0.109727	0.017513	8.323669	0.145775
66	0.013572	8.518733	0.115620	0.018365	8.366524	0.153652
67	0.014090	8.626133	0.121541	0.019131	8.413715	0.160959
68	0.014598	8.730740	0.127447	0.019789	8.464681	0.167509
69	0.015092	8.832007	0.133294	0.020321	8.518867	0.173109
70	0.015570	8.929390	0.139032	0.020707	8.575709	0.177573
71	0.016028	9.022344	0.144610	0.020931	8.634651	0.180730
72	0.016462	9.110324	0.149973	0.020980	8.695133	0.182428
73	0.016868	9.192784	0.155065	0.020980	8.756597	0.183717
74	0.017243	9.269181	0.159830	0.020980	8.818482	0.185016
75	0.017583	9.338967	0.164209	0.020980	8.880232	0.186311
76	0.017885	9.401601	0.168147	0.020980	8.941286	0.187592
77	0.018145	9.456533	0.171587	0.020980	9.001085	0.188847
78	0.018360	9.503221	0.174477	0.020980	9.059071	0.190064
79	0.018527	9.541120	0.176769	0.020980	9.114685	0.191230
80	0.018644	9.569683	0.178417	0.020980	9.167367	0.192336
81	0.018708	9.588367	0.179384	0.020980	9.216559	0.193368
82	0.018719	9.596627	0.179636	0.020980	9.261701	0.194315
83	0.018719	9.596627	0.179636	0.020980	9.302235	0.195165
84	0.018719	9.596627	0.179636	0.020980	9.337602	0.195907
85	0.018719	9.596627	0.179636	0.020980	9.367242	0.196529
86	0.018719	9.596627	0.179636	0.020980	9.390598	0.197019
87	0.018719	9.596627	0.179636	0.020980	9.407109	0.197366
88	0.018719	9.596627	0.179636	0.020980	9.416218	0.197557
89	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581
90	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581
91	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581
92	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581
93	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581
94	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581
95	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581
96	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581
97	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581
98	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581
99	0.018719	9.596627	0.179636	0.020980	9.417364	0.197581

Appendix 5
Each Payment Hospitalization Data - Valuation
Females and Males

	Female			Male		
Age	Incidence	Length of Stay	Claim Cost	Incidence	Length of Stay	Claim Cost
18	0.000705	10.782127	0.007596	0.000900	18.784510	0.016915
19	0.000745	10.400228	0.007748	0.000855	18.170397	0.015528
20	0.000789	10.040251	0.007919	0.000819	17.579002	0.014398
21	0.000836	9.701664	0.008110	0.000793	17.009933	0.013482
22	0.000887	9.383934	0.008323	0.000774	16.462796	0.012745
23	0.000942	9.086531	0.008559	0.000763	15.937193	0.012160
24	0.001001	8.808920	0.008820	0.000758	15.432734	0.011705
25	0.001065	8.550570	0.009109	0.000760	14.949022	0.011365
26	0.001134	8.310948	0.009427	0.000768	14.485664	0.011128
27	0.001209	8.089522	0.009777	0.000782	14.042265	0.010984
28	0.001289	7.885761	0.010163	0.000802	13.618433	0.010926
29	0.001375	7.699130	0.010587	0.000829	13.213771	0.010951
30	0.001468	7.529098	0.011053	0.000862	12.827885	0.011056
31	0.001568	7.375132	0.011565	0.000902	12.460382	0.011239
32	0.001676	7.236701	0.012127	0.000950	12.110869	0.011502
33	0.001792	7.113273	0.012744	0.001006	11.778949	0.011847
34	0.001916	7.004312	0.013420	0.001071	11.464228	0.012277
35	0.002050	6.909290	0.014162	0.001146	11.166313	0.012797
36	0.002193	6.827671	0.014974	0.001232	10.884809	0.013413
37	0.002347	6.758925	0.015864	0.001331	10.619324	0.014134
38	0.002512	6.702520	0.016838	0.001444	10.369460	0.014969
39	0.002689	6.657922	0.017904	0.001572	10.134825	0.015927
40	0.002878	6.624599	0.019068	0.001717	9.915024	0.017023
41	0.003081	6.602019	0.020340	0.001882	9.709665	0.018269
42	0.003297	6.589649	0.021727	0.002068	9.518351	0.019682
43	0.003528	6.586958	0.023239	0.002278	9.340688	0.021281
44	0.003774	6.593413	0.024886	0.002516	9.176283	0.023084
45	0.004037	6.608481	0.026676	0.002783	9.024741	0.025114
46	0.004316	6.631631	0.028619	0.003083	8.885667	0.027396
47	0.004612	6.662328	0.030726	0.003420	8.758670	0.029954
48	0.004926	6.700042	0.033008	0.003797	8.643352	0.032818
49	0.005260	6.744241	0.035473	0.004218	8.539321	0.036017
50	0.005612	6.794391	0.038132	0.004686	8.446181	0.039582
51	0.005985	6.849961	0.040994	0.005206	8.363540	0.043544
52	0.006377	6.910417	0.044070	0.005782	8.291002	0.047936
53	0.006791	6.975227	0.047367	0.006416	8.228173	0.052791
54	0.007225	7.043860	0.050892	0.007112	8.174659	0.058137
55	0.007681	7.115784	0.054653	0.007872	8.130066	0.064002
56	0.008157	7.190463	0.058654	0.008699	8.094000	0.070410
57	0.008655	7.267369	0.062899	0.009593	8.066066	0.077378
58	0.009174	7.345967	0.067390	0.010554	8.045870	0.084914
59	0.009713	7.425726	0.072126	0.011580	8.033018	0.093019
60	0.010272	7.506113	0.077104	0.012667	8.027116	0.101679
61	0.010850	7.586595	0.082317	0.013810	8.027769	0.110866
62	0.011447	7.666640	0.087758	0.015002	8.034583	0.120537
63	0.012060	7.745717	0.093413	0.016233	8.047164	0.130628
64	0.012689	7.823292	0.099268	0.017490	8.065118	0.141056
65	0.013331	7.898833	0.105301	0.018758	8.088050	0.151714
66	0.013985	7.971808	0.111489	0.020020	8.115567	0.162473
67	0.014649	8.041684	0.117805	0.021257	8.147274	0.173185
68	0.015320	8.107931	0.124215	0.022447	8.182776	0.183676
69	0.015996	8.170013	0.130684	0.023566	8.221679	0.193756
70	0.016672	8.227400	0.137169	0.024592	8.263589	0.203221
71	0.017347	8.279559	0.143626	0.025500	8.308114	0.211854
72	0.018017	8.325958	0.150006	0.026265	8.354856	0.219437
73	0.018677	8.366064	0.156256	0.026865	8.403423	0.225755
74	0.019325	8.399345	0.162319	0.027279	8.453420	0.230601
75	0.019956	8.425269	0.168136	0.027491	8.504454	0.233794
76	0.020566	8.443303	0.173646	0.027491	8.556129	0.235214
77	0.021151	8.452914	0.178787	0.027491	8.608052	0.236642
78	0.021706	8.453571	0.183494	0.027491	8.659828	0.238065
79	0.022227	8.444741	0.187704	0.027491	8.711063	0.239473
80	0.022710	8.425893	0.191354	0.027491	8.761363	0.240856
81	0.023151	8.396493	0.194385	0.027491	8.810334	0.242203
82	0.023545	8.356008	0.196740	0.027491	8.857581	0.243501
83	0.023888	8.303908	0.198365	0.027491	8.902711	0.244742
84	0.024177	8.239658	0.199214	0.027491	8.945328	0.245914
85	0.024409	8.162727	0.199245	0.027491	8.985038	0.247005
86	0.024580	8.162727	0.200642	0.027491	9.021448	0.248006
87	0.024688	8.162727	0.201522	0.027491	9.054163	0.248906
88	0.024688	8.162727	0.201522	0.027491	9.082789	0.249693
89	0.024688	8.162727	0.201522	0.027491	9.106933	0.250356
90	0.024688	8.162727	0.201522	0.027491	9.126198	0.250886
91	0.024688	8.162727	0.201522	0.027491	9.126198	0.250886
92	0.024688	8.162727	0.201522	0.027491	9.126198	0.250886
93	0.024688	8.162727	0.201522	0.027491	9.126198	0.250886
94	0.024688	8.162727	0.201522	0.027491	9.126198	0.250886
95	0.024688	8.162727	0.201522	0.027491	9.126198	0.250886
96	0.024688	8.162727	0.201522	0.027491	9.126198	0.250886
97	0.024688	8.162727	0.201522	0.027491	9.126198	0.250886
98	0.024688	8.162727	0.201522	0.027491	9.126198	0.250886
99	0.024688	8.162727	0.201522	0.027491	9.126198	0.250886