



Hixme Insurance Solutions, Inc.

Health Market Impact of Employer Migration to the Individual Market

Axene Health Partners, LLC

Gregory G. Fann, FSA, FCA, MAAA

John F. Fritz, FSA, FCA, MAAA

Dustin D. Tindall, FSA, MAAA

May 8, 2017

Table of Contents

| | |
|--|----|
| Section 1: Executive Summary..... | 1 |
| Introduction | 1 |
| Description of Scope of Work | 1 |
| Key Findings and Observations | 1 |
| Section 2: Individual Market History..... | 6 |
| Introduction | 6 |
| Risk Classification | 6 |
| Impetus for Federal Legislation | 6 |
| Conclusion | 7 |
| Section 3: Individual Market Risk Pool Implications of the ACA..... | 8 |
| Introduction | 8 |
| Access and Affordability | 8 |
| ACA Challenges | 9 |
| Conclusion | 9 |
| Section 4: Individual Market Risk Adjustment Implications of the ACA | 10 |
| Introduction | 10 |
| Data Source (MarketScan®)..... | 11 |
| Partial Year Enrollment | 11 |
| Hierarchical Condition Categories (HCC) Scoring | 11 |
| Special Enrollment Periods (SEP) | 12 |
| Risk Adjustment Impact on Pricing | 12 |
| Conclusion | 12 |
| Section 5: Implications of Employee Migration from Group to Individual Market..... | 13 |
| Introduction | 13 |
| Modeling Approach | 13 |
| Market Size..... | 13 |
| Market Demographic Mix | 14 |

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017

Page i



Axene Health Partners, LLC
www.axenehp.com

| | |
|-----------------------------|----|
| Migration Impact | 17 |
| Balanced Risk Pool | 18 |
| Health Status Impact | 19 |
| Impact to Stakeholders..... | 22 |
| Section 6: Conclusion | 23 |
| Appendix A..... | 25 |
| Appendix B | 32 |
| Appendix C | 33 |



Section 1: Executive Summary

Introduction

This report has been prepared for Hixme Insurance Solutions, Inc. (Hixme) at the request of Denny Weinberg, Chief Executive Officer of Hixme, for the purpose of illustrating the impact of employee migration from the traditional large employer market to the individual market.

Description of Scope of Work

Axene Health Partners, LLC (AHP) was retained by Hixme to analyze the impact of migration of employees from the traditional large employer market to the individual off-exchange market. Our report includes:

1. A summary of the individual market prior to the Patient Protection and Affordable Care Act (ACA).
2. Impact of the ACA on the demographic/risk mix of the individual market.
3. Impact of the ACA on the stability of the individual market.
4. Impact of migration of people from the large employer market to the individual market. Our migration analysis is aligned with full replacement models of large employers and does not account for individualized, nuanced selective migration due to rating factor differences (i.e. age, gender) between the large employer and individual markets due to ACA market rules.

This report presents our understanding of the individual market impact due to a steady migration of employees from the traditional employer group market to the individual market.

Key Findings and Observations

Through tax policy changes consisting of federal subsidies and penalties for not having “minimal essential coverage”, the ACA created new incentives for individuals to enroll in Medicaid and the private individual market. This influx of federal assistance, combined with heavy promotion efforts, has prompted more individuals to obtain insurance or Medicaid coverage and contributed to a lower uninsured rate nationwide. The incentives in the individual market are disjointed and have led to a larger population, but notably an unbalanced

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017

Page 1



Axene Health Partners, LLC
www.axenehp.com

population with a skewed enrollment distribution along the age/income spectrum.

This resulting population has put upward pressure on premiums, and some carriers have left the market because of large financial losses and continued market volatility and predictability concerns. Given the intrinsic dynamics of the market rules and subsidy mechanics, the marketplace will continue to face significant challenges without substantial changes. Legislative changes could certainly help with stabilization, but market composition changes due to new distribution channels could help as well. Without appropriate and timely changes, the ACA marketplaces are likely to remain destabilized with reduced competition.

Our key findings include:

- The pre-ACA individual market generally functioned with an alignment of premiums and risk through the use of individual medical underwriting and the allowance of independently developed and actuarially allowable premium rating factors, notably varying by age as claim relativities vary by benefit plan and geography.
- Pre-ACA individual premiums were often attractive for healthy individuals, especially for young men. The pre-ACA market was tax disadvantaged relative to the employer market and notably much smaller than the employer market. Individuals who sought coverage while having costly health conditions were sometimes declined insurance or at least discouraged from enrolling due to higher than standard premium rates.
- The ACA changed the enrollee composition and increased the size of the individual market with new market rules and the inclusion of tax subsidies in a previously tax-disadvantaged market. These subsidies are only available to those enrolling on the exchange and are most favorable to older individuals. Likewise, both the on and off-exchange markets are more favorable to non-subsidized older individuals due to the constrained age rating curve. This has resulted in the individual market enrollees being not only older on average than the group market, but also older than the nationwide under age 65 general population.
- Relative to expectations and alleged sustainability requirements, the ACA did not attract the targeted cross section of members in the individual

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017

Page 2



Axene Health Partners, LLC
www.axenehp.com

market. The rating requirements and the unbalanced allocation of tax subsidies attracted an older and sicker population. This resulted in higher average costs and less favorable risk adjustment settlements for insurers, both of which have necessarily increased future premium rates.

- With the current framework and resulting population, the individual market will continue to struggle with sustainability. Population changes could be brought about by different incentive structures through legislation, intelligent use of waivers via Section 1332¹, or through employer subsidies and material changes in distribution channels.
- Without changes, the impact of higher premiums in the future will discourage enrollment in the off-exchange market and limit enrollment in the on-exchange market to primarily an older, sicker and proportionately higher low-income population. Balanced growth in the off-exchange market will stabilize premiums both in the on-exchange and off-exchange markets due to the single risk pool pricing requirements. This will lower the required federal subsidies to provide individuals access to the premium thresholds determined to be affordable by the ACA.
- Migration of workers from the traditional group market to the individual market will lower the average age and increase stability in the individual market.
 - Despite all the attention that it receives, the individual market is quite small and subject to frequent turnover. The lack of a large, continuous enrollment base has led to instability. Insurance risk pools need large volumes of consistent enrollment for insurers to be able to reasonably predict future costs. Regardless of the composition of migrating individuals, an increase in the individual market size alone would increase stability and predictability to at least some extent.
 - The individual market is very fluid with many individuals being enrolled for only a few months. If employers are accessing the individual market, their annual enrollment and renewal procedures would enhance continuity of enrollment throughout the year and in following years. Kurt Wrobel, the Chief Financial Officer for Geisinger Health Plan, explains this well. “When we have information on a

¹ “Section 1332 Waivers. Coming Soon to a State Near You?” www.soa.org/sections/health/health-newsletter/ Health Watch - May 2016

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



population that is expected to be consistent from one period to the next, our estimates can be accurate and largely relied upon when developing cost estimates. However, if the population is not stable, we have to make assumptions about the expected population in the rating period or draw a connection between the cost of the expected population and another population.”²

- o One of the notable requirements of the ACA is that insurers must accept all applicants (and not adjust rates) during an annual open enrollment period, regardless of health status or pre-existing conditions.

Prior to the ACA, individuals were subject to a “medical underwriting” process where eligibility and rates were dependent on health status. This “guarantee issue” requirement under ACA has led to a situation where a relatively small number of individuals not previously covered in the individual market now contribute to most of the claims costs. Some of these high cost individuals were previously in high risk pools, uninsured and/or had their ACA premiums paid by third party medical providers³. As market premiums necessarily support all claim costs, a high level of healthier members is required to balance costs and maintain market premiums at reasonable levels.

As market rules are consistent for all applicants, medical underwriting is also not applied to individuals migrating from traditional group insurance. However, by virtue of being employed, an actively-at-work population indicates a healthier membership. Also, healthy individuals less inclined to purchase individual health coverage are more likely to enroll when coverage is sponsored and partially subsidized by their employer. Migration of workers to the individual market will help minimize claim variation, add to balance of the risk pool, and lower average costs in the market.

- There has been public confusion regarding the taxation implications of employers utilizing individual health policies for their workers. Clarity from the federal government on these matters would be a catalyst for more

² “The Individual Market and ACA Products: Starting from First Actuarial Principles” www.soa.org/sections/health/health-newsletter/ The ACA@5 - August 2015

³ www.insurancenewsnet.com/oarticle/state-regulators-investigate-if-steering-has-boosted-premiums

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



employers being comfortable with consideration of the individual market as a potential option for their workers' health insurance. As discussed in this report, this would foster a more robust and stable individual insurance market.

Hixme's model facilitates the transition of employer group coverage to other actuarially equivalent coverage by bundling individual market products with other wrap-around coverages by means of proprietary algorithms. The transition of individuals from group coverage to individual coverage results in a larger, younger, more sustainable individual market population. Furthermore, this population improvement to a broader age/income spectrum attracts insurers that have been discouraged by the past and current volatility. These findings and observations are described in more detail in this report.

Section 2 presents a historical overview of the pre-ACA market.

Section 3 presents the implications of the ACA on the risk pool in the individual market.

Section 4 presents the implications of the ACA risk adjustment methodology on the individual market.

Section 5 presents the likely demographic and cost implications of increased migration of traditional employer market enrollees to the individual market.

Section 6 provides concluding remarks.

We applaud Hixme's mission of utilizing technology to optimize plan efficiency and explore a wider range of health coverage options for its employer clients. As discussed in this report, we believe that a fortunate by-product of Hixme's model will be a larger, more stable individual market population. We at AHP, as citizens and stakeholders in the health care arena, are committed to developing sustainable health care markets and appreciate the opportunity to opine⁴ on the implications of migration of workers from the traditional group health insurance market to the individual health insurance market. Any questions on this report should be directed to Gregory G. Fann at 951 239 3022 or greg.fann@axenehp.com.

⁴ Opinions are reflective of the authors of this report and are not necessarily reflective of other AHP consultants.



Section 2: Individual Market History

Introduction

Prior to the ACA, individual health insurance premiums were aligned with risk characteristics. Policies were sold and underwritten individually, and had a higher expense load than products sold to employers. Individual products also had a higher net cost as the favorable tax treatment available for employer group health insurance was not accorded when purchasing individual coverage. Rates varied by age, gender, and health status, and insurers generally had the freedom and flexibility to determine actuarially appropriate factors for these variables.⁵

Risk Classification

The importance of alignment between premium and risk characteristics is discussed in Actuarial Standards of Practice (ASOP) No. 12. The ASOPs are promulgated by the Actuarial Standards Board and provide the primary guidance of items that actuaries should consider when performing an actuarial assignment. ASOP No. 12 warns of adverse selection (also known as anti-selection) when premium rates are not “fair” or equitable. Fairness is defined as consistency between premium rates and risk characteristics. As discussed in the background section of ASOP No. 12, “Risk classification is generally used to treat participants with similar risk characteristics in a consistent manner, to permit economic incentives to operate and thereby encourage widespread availability of coverage, and to protect the soundness of the system.”⁶ This principle is most acute in the individual health market, given the high cost of health insurance and the anti-selective potential of individual coverage.

Impetus for Federal Legislation

As medical costs increased much faster than wages and general inflation, tax-disadvantaged individual insurance became less attractive and the proportion of uninsured individuals in the country increased steadily beginning in 1980. The increasing proportion of uninsured Americans was viewed as a social problem, and some policymakers believed that this could be remedied by changing the health insurance market rules and providing federal subsidies to lower-income individuals. The primary market rule in contention was the ability of insurers to

⁵ “The Evolution of the Individual Market (Part I)” www.soa.org/sections/health/health-newsletter/ Health Watch - March 2017

⁶ http://actuarialstandardsboard.org/wp-content/uploads/2014/07/asop012_101.pdf

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



decline to insure or charge higher rates to individuals with significant health conditions at the time of application.

Despite existing cost challenges of other entitlement programs, a divided Congress passed the ACA with support from the Obama administration. This injected new federal funding into the individual health insurance market and overhauled the market rules and the traditional pricing structures. A detailed explanation of the impetus of the ACA, sustainability considerations, and its uniqueness relative to other government programs is included as Appendix A.

Similar regulatory ideas around market rules, clearly in the realm of the risk classification concern discussed in ASOP No. 12, had been implemented in various states in the last thirty years. They had generally not succeeded, largely due to market withdrawal from insurers and higher claim costs due to lower participation of young and healthy enrollees. The authors of the ACA were familiar with states' histories and believed that the risk classification challenges could be overcome with tax penalties for individuals not obtaining minimum essential coverage, heavy promotional efforts, and a large financial commitment from the federal government in the form of benefit and premium subsidies.

Conclusion

Prior to the ACA, premiums were generally aligned with risks in accordance with the principle of ASOP No. 12. Consequently, premiums were "fair" for consumers and insurers were indifferent to their risk mix. Lawmakers recognized that changes in ACA market rules would violate this fairness principle, but believed that anti-selective patterns could be overcome through outlays of tax subsidies and penalties to incentivize broad enrollment.

As discussed throughout this report, the unbalanced incentives in the ACA have led to a volatile market. Employer purchase of health insurance, by its nature, is less anti-selective than individual purchases. If employers access the individual market in mass, this will lead the ACA market back towards a sustainable market distribution when "fair" premiums were in place.



Section 3: Individual Market Risk Pool Implications of the ACA

Introduction

The ACA, enacted by Congress in 2010, brought numerous changes to the individual healthcare market.⁷ The primary stated program goal was to provide access to affordable health care for all Americans. The enacted law is vast and complex but the centerpiece of the legislation is the overhaul of individual market rules linked with a larger degree of federal involvement and oversight.

Access and Affordability

The “access” portion of the program goal is intended to be achieved by prohibiting insurers in the individual market from selecting enrollees based on health status or using health status as a rating variable. Insurers’ inability to use health status as a rating variable, as alluded to in ASOP No. 12, may result in market enrollment of a higher cost population which necessitates insurers charging higher premiums to be able to insure the higher costs. These higher premiums present challenges to both affordability and product offerings of a fair value.

The “affordable” portion of the program is intended to be achieved by subsidization of costs (both premium and cost-sharing) for some enrollees in the individual market. These subsidies are targeted to lower-income individuals and offer no relief to individuals and families with an income above 400% of the Federal Poverty Level. Effectively, this bifurcated the individual market into two segments, a lower income population that was charged an “affordable” rather than a fair premium and a higher income population that was generally charged higher than a fair premium but presumed to be affordable.

An unfortunate consequence of the mechanics of the intricate calculations is that coverage incentives vary dramatically by age and income level.⁸ Consequently, the varying relationships between the subsidy amounts and the full premium create varying degrees of enrollment incentives for different groups of eligible enrollees. This leads to an unbalanced marketplace. Significant leveraging of the premium subsidy produces situations where older enrollees

⁷ Many of the market rules changes and other mechanisms applied identically to the small employer market. This report is focused on the impact of changes to the individual market and is accordingly silent on changes to the small employer market.

⁸ “The True Cost of Coverage” <http://theactuarymagazine.org/the-true-cost-of-coverage/> The Actuary - Dec 2015



pay less for certain benefit plans (those with lower gross premium than the benchmark plan)⁹ than younger enrollees at the same income level. This has led to a fragile and unstable market.

ACA Challenges

The authors of the ACA recognized that enrollment of a significant number of young and healthy individuals was necessary for a sustainable market. Heavy promotional efforts of the new marketplace were sometimes geared to this demographic segment and expected to neutralize the unbalanced incentives.

These underlying financial incentives to enroll were more advantageous for an older, sicker population. This enrollment imbalance has generated financial losses for insurers and incited some market exits. A proper understanding of the subsidy mechanics is necessary to formulate the risk pool impact of market rule changes or the material introduction of a new population into the individual market. Sustainability challenges will continue for the ACA individual market with reliance on an individual sales distribution approach; an employer mechanism of enrolling a broader population could help foster market sustainability.

Conclusion

The impact of the premium subsidies on net premium rates is not intuitive and generally not well understood. There is a natural inclination to generalize and believe that the premium subsidies will have uniform and directionally appropriate effects across the population. Notably, the ACA subsidies are targeted to older adults. Accordingly, the proportion of young adults in the market is much lower than expected despite heavy promotion efforts.

The ACA emphasized access and affordability without giving appropriate recognition to the value of benefits received relative to net premiums (gross premiums minus federal subsidies), resulting in an unbalanced subsidy structure. For some individuals, net premiums were well below the benefit value. For other individuals, net premiums were excessive relative to benefit value. This subsidy imbalance led to an imbalanced market. Notably, some of the recent legislative proposals include a more balanced allocation of tax credits that provide broader enrollment incentives.¹⁰ Outside of legislation to adjust the current dynamics, regulatory and market solutions could facilitate broader enrollment of younger individuals.

⁹ "Implications of Individual Subsidies in the Affordable Care Act—What Stakeholders Need to Understand" www.soa.org/professional-interests/health/health-pricing-resources.aspx Health Watch - May 2014

¹⁰ "ASOPs, Anti-Selection, Affordability and ACA Alternatives" www.soa.org/sections/health/health-newsletter/ Health Watch - November 2016

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



Section 4: Individual Market Risk Adjustment Implications of the ACA

Introduction

The ACA dramatically changed the expected population in the individual market. Insurers expected to enroll a large volume of previously uninsured individuals without documented prior claims experience. To mitigate the population uncertainty risk, three premium stabilization processes were put in place by the ACA to smooth the transition to the new market environment. These protections consisted of two temporary mechanisms and a permanent risk adjustment program.

Risk adjustment, the permanent and most important risk mitigation process, attempts to bridge the difference between allowable rates and actuarially appropriate rates. As insurers are not able to select or charge fair premiums for the risks they accept, a risk adjustment mechanism is included to compensate insurers for the risks they enroll, relative to other insurers in the marketplace. This ideal is intended to have insurers compete on their ability to provide quality affordable care and an efficient administrative system, while neutralizing the impact of competition based on enrollee selection. A well-constructed risk adjustment model fosters insurers' indifference to the risk of their population, market stability, and predictable results.

The instability in the individual market has led to an even more challenging and unpredictable risk adjustment environment. Circularly, the associated market dynamics magnify the uncertainty of risk adjustment transfer payments and create larger volatility in the individual market. A consistent, balanced population would lead to a more stable risk pool and reduce the current pricing and risk adjustment volatility.

The Centers for Medicare and Medicaid Services (CMS) has acknowledged recognition of many of the problems raised with the risk adjustment methodology. In March 2016, CMS released a White Paper¹¹ and facilitated an industry conference to discuss the ongoing concerns. Many of these concerns were also discussed in the 2018 "payment notice"¹², the annual regulation to update rules and parameters for ACA markets. The risk adjustment issues that

¹¹ <https://www.cms.gov/CCIIO/Resources/Forms-Reports-and-Other-Resources/Downloads/RA-March-31-White-Paper-032416.pdf>

¹² <https://s3.amazonaws.com/public-inspection.federalregister.gov/2016-30433.pdf>

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



would be impacted by employee migration to the individual market are discussed below in this section.

Data Source (MarketScan®)

Historical data used to calibrate a risk adjustment model should be reflective of the expected population. The current database being used, MarketScan® large group commercial data, utilizes data that is not representative of the current individual market population. Membership data in the large group experience base did not have a large concentration of partial year enrollees, which is typical for the individual market. ASOP No. 45 states that “the type of input data that is used in the application of risk adjustment should be reasonably consistent with the type of data used to develop the model.”¹³ Migration of employees of large employers into the individual market would better align the market population with the population used to calibrate the risk adjustment model.

Partial Year Enrollment

New and growing insurers are more likely to have a higher proportion of partial year enrollees who may be missing prior diagnoses. Additionally, unlike the Medicare Advantage program, diagnoses are not tracked by a centralized source so enrollees that change insurers are not recognized as having diagnoses recorded by a prior insurer. Prior to 2017, there was no adjustment in the risk adjustment model for partial year enrollees, which disadvantaged new and growing insurers. A model adjustment is being implemented in 2017. Migration of workers from large employers into the individual market would reduce the proportion of partial year enrollees and thereby add stability to the market.

Hierarchical Condition Categories (HCC) Scoring

The HHS-HCC¹⁴ scoring methodology, distinguished from the Medicare Advantage CMS-HCC methodology, of assigning risk levels to individuals has a negative impact on insurers who attract a younger, healthier population. This potentially could violate an ACA principle of insurers being indifferent to the population they enroll. Enrollment of a healthier population is beneficial to the overall market, but may negatively impact and penalize the insurer who attracts an above average proportion of them. Migration of workers from large employers would bring a younger population into the individual risk pool and improve the age balance harmed by the biased scoring methodology.

¹³ www.actuarialstandardsboard.org/wp-content/uploads/2014/02/asop045_164.pdf

¹⁴ <http://www.axenehp.com/annual-aca-check-stabilizing-new-marketplaces/#more-1174>

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



Special Enrollment Periods (SEP)

Special enrollment periods provide exceptions for qualified individuals to enroll for health care coverage outside of the annual open enrollment periods. This ensures that people who lose health insurance during the year due to a qualifying event are available to continue coverage.

There have been numerous complaints that SEP rules are not being adequately enforced. Notably, some insurers believe that they manage the process better than the exchanges and have stopped offering products on-exchange. The population that has enrolled through SEPs have been shown to have higher costs, yet have lower risk scores.¹⁵ Migration of employees from large employers, particularly off-exchange, would increase the market size and reduce the overall negative SEP impact on the risk pool.

Risk Adjustment Impact on Pricing

The current risk adjustment methodology requires the pricing actuary to predict many things that are outside the scope of the traditional pricing mechanics and unrelated to the risk profile of the issuer population or the market population.¹⁶ The current individual marketplace is unattractive to issuers and young healthy individuals alike. Accordingly, there is significant turmoil in the market with issuers leaving, individuals staying for a short time, and individuals changing insurers. This market volatility adds to the unpredictability of the risk adjustment calculations.¹⁷ A reduction in volatility from an influx of large group employees would help to stabilize risk adjustment and pricing implications.

Conclusion

A successful risk adjustment program fosters predictability and eliminates (or significantly minimizes) incentives for enrollee selection based on health status or specific health conditions. Specifically, it equitably adjusts premium levels to reflect the likely or actual health status or actuarial risk of an enrolled population. It provides impartial treatment for all health plans, and does not offer advantages or disadvantages based on items unrelated to population risk. The volatile nature of the risk adjustment results has been a major concern for small health plans and new market entrants. Migration of workers from the large employer market to the individual market would foster a more stable market and more stable risk adjustment results.

¹⁵ <http://avalere.com/expertise/life-sciences/insights/consumers-enrolling-in-exchanges-through-special-enrollment-periods-have-hi>

¹⁶ “The Evolution of the Individual Market (Part I)” www.soa.org/sections/health/health-newsletter/ Health Watch - March 2017

¹⁷ Five (AL, AK, OK, SC, WY) individual state marketplaces that have become challenging have only one remaining insurer. In these states, risk adjustment is not a variable factor as the only insurer would have a factor of 1.000 and would not have any applicable transfer payments.

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



Section 5: Implications of Employee Migration from Group to Individual Market

Introduction

Migration of workers from the group market to the individual market will have implications on both the size and the demographic/risk mix of the individual risk pool. In this section, we share the results of our migration model which assumes individual coverage as a full group replacement (as opposed to allowing bifurcating workers between markets). This is consistent with Hixme's requirements.

Modeling Approach

In our analysis, we balance the need for complexity and precision with simplicity and reproducibility. A simple transparent and reproducible model is advantageous relative to an unnecessarily complex one with suspect assumptions. To avoid an overly complex approach, our analysis is based on a nationwide population and does not include state distinctions. Actual results may vary if migration is concentrated in a few states. Regarding data and reproducibility, we used a mix of public and proprietary data. We noticed similar patterns between the two datasets. To emphasize reproducibility, we present our findings using the publicly available data. Finally, our analysis is based on several underlying assumptions (listed in Appendix B) and any deviation from these assumptions will likely impact the results.

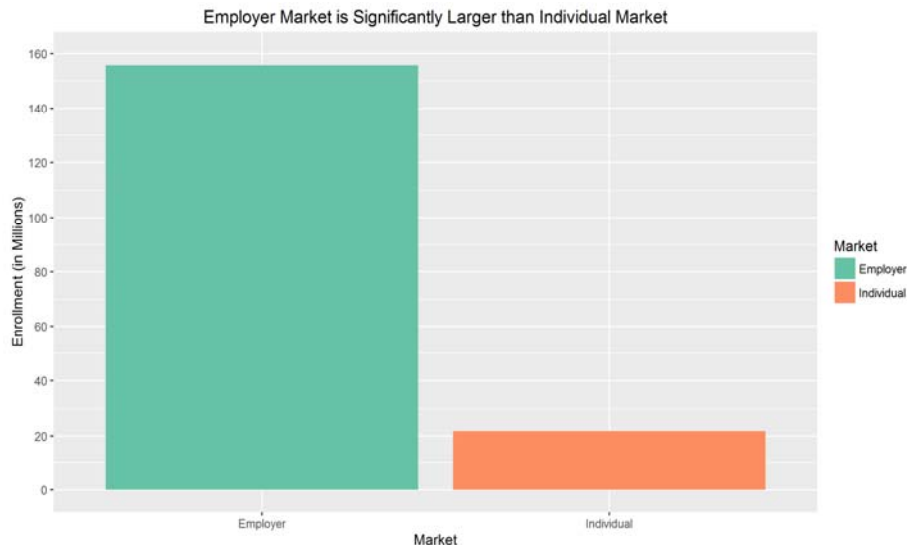
Market Size

The employer/group market is much larger than the individual market. Below is a graph showing the market size of the employer market versus the individual market for 2015.¹⁸ In 2015, the employer market consisted of approximately 155 million people compared to 21 million in the individual market split between ACA compliant, transitional (grandmothered), and grandfathered business.

¹⁸ "The Kaiser Family Foundation's State Health Facts." Data Source: Kaiser Family Foundation estimates based on the Census Bureau's March 2014, March 2015, and March 2016 Current Population Survey (CPS: Annual Social and Economic Supplements), Timeframe 2015, "Health Insurance Coverage of the Total Population." Note: "Non-group market" is identical to "individual market."

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017





Market Demographic Mix

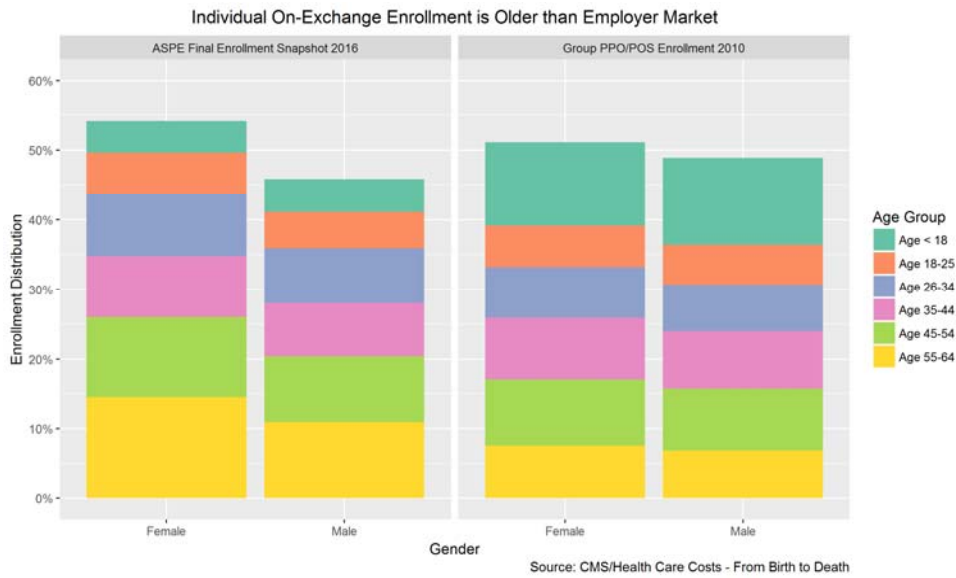
In addition to being different in size, the two markets also have a varying demographic mix of individuals. The employer market, for the most part, consists of working individuals and their families. This improves the morbidity of the population as the subscriber/worker is healthy enough to perform occupational duties. The individual market population has significantly changed since 2013 due to the enrollment mix impact of the ACA. The heterogeneity of the individual market is unique; it consists of a mix of workers (and their dependents) who do not get affordable coverage from their employer, self-employed individuals, short-term enrollees (i.e. group coverage gaps), unemployed individuals, and other individuals who do not qualify for Medicare or Medicaid. The resulting age and gender mix of the individual market is significantly different than the employer group market.

Below is a graph showing the distribution of gender and age for both the individual market and the group/employer market. For the individual market, we are using data from the ASPE Issue Brief, “Health Insurance Marketplaces 2016 Open Enrollment Period: Final Enrollment Report”.¹⁹ This represents a subset of the market, individuals enrolled on the federal exchanges. For the group market, we are using Chart 5 from the Healthcare Costs – From Birth to Death research paper (Appendix C), which is 2010 group enrollment in PPO/POS plans from the commercial data held by the Health Care Cost Institute (HCCI).

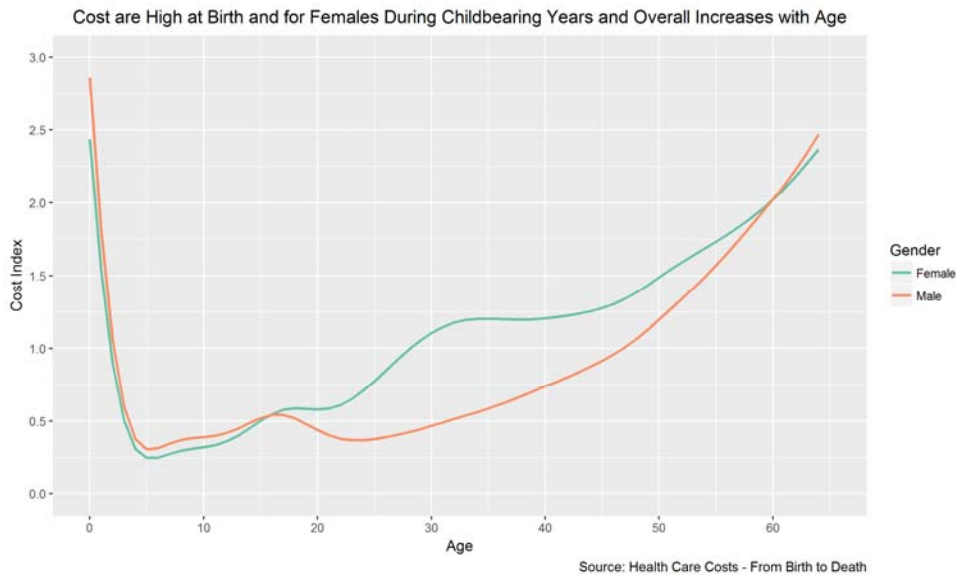
¹⁹ Department of Health and Human Services. *ASPE Issue Brief: Health Insurance Marketplaces 2016 Open Enrollment Period: Final Enrollment Report*. For the period: November 1, 2015 – February 1, 2016. March 11, 2016. Retrieved from <https://aspe.hhs.gov/pdf-report/health-insurance-marketplaces-2016-open-enrollment-period-final-enrollment-report>

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017





The average age and gender mix of a population is important for health insurance as older individuals have health care costs significantly higher than younger individuals. For young adults, health care costs are higher, particularly during the child bearing years, for women relative to men. These differences in cost are shown in the graph below.



For the purpose of comparing expected cost of the individual data and group data, we develop composite cost indices by gender and age group using the

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



employer distribution from Chart 5 of the From Birth to Death research paper. The values are shown in the table below and the total composite is 1.000.

| Age Group | Weighted Cost Index | | | Enrollment Distribution | | |
|--------------|---------------------|--------------|--------------|-------------------------|--------------|---------------|
| | Male | Female | Total | Male | Female | Total |
| Age < 18 | 0.569 | 0.496 | 0.533 | 12.5% | 12.0% | 24.4% |
| Age 18-25 | 0.422 | 0.633 | 0.529 | 5.7% | 5.9% | 11.7% |
| Age 26-34 | 0.474 | 1.075 | 0.788 | 6.6% | 7.3% | 13.9% |
| Age 35-44 | 0.728 | 1.215 | 0.979 | 8.3% | 8.8% | 17.1% |
| Age 45-54 | 1.175 | 1.467 | 1.327 | 8.8% | 9.5% | 18.3% |
| Age 55-64 | 1.964 | 1.994 | 1.980 | 6.9% | 7.6% | 14.5% |
| Total | 0.872 | 1.122 | 1.000 | 48.9% | 51.1% | 100.0% |

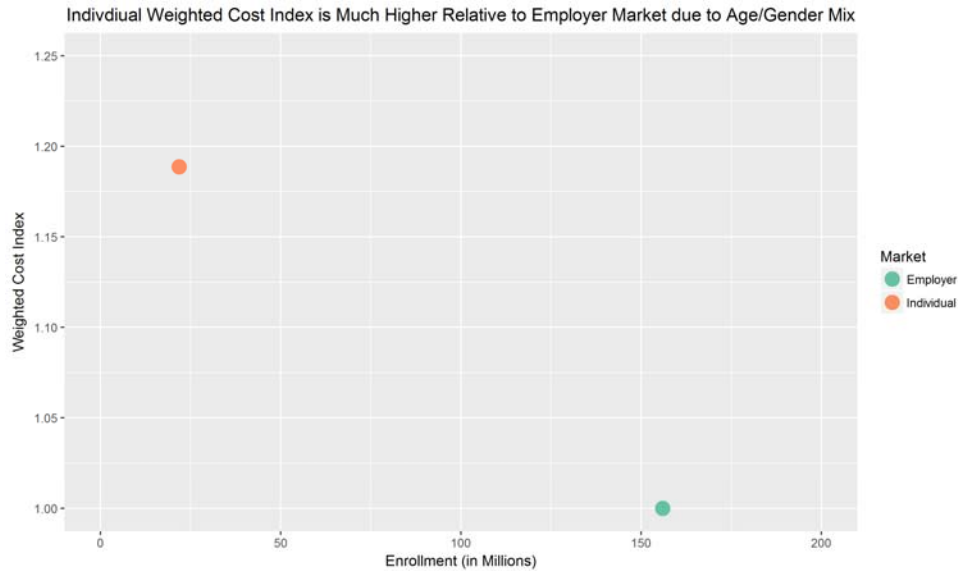
The composite values by age group can be paired with the individual ACA enrollment by gender and age group to come to a total cost index factor for the ACA population. The table for this population is below.

| Age Group | Weighted Cost Index | | | Enrollment Distribution | | |
|--------------|---------------------|--------------|--------------|-------------------------|--------------|---------------|
| | Male | Female | Total | Male | Female | Total |
| Age < 18 | 0.569 | 0.496 | 0.533 | 4.7% | 4.5% | 9.3% |
| Age 18-25 | 0.422 | 0.633 | 0.535 | 5.2% | 6.0% | 11.2% |
| Age 26-34 | 0.474 | 1.075 | 0.793 | 7.9% | 8.9% | 16.8% |
| Age 35-44 | 0.728 | 1.215 | 0.989 | 7.5% | 8.7% | 16.3% |
| Age 45-54 | 1.175 | 1.467 | 1.336 | 9.5% | 11.5% | 21.0% |
| Age 55-64 | 1.964 | 1.994 | 1.981 | 11.0% | 14.5% | 25.4% |
| Total | 1.021 | 1.330 | 1.189 | 45.8% | 54.2% | 100.0% |

The index values by age group and gender are the same in both tables. The only difference between the tables is the enrollment distribution which leads to differences in the weighted cost indices. The identical index values suggest that the individual market morbidity in each gender/age group combination is equivalent to the group population. A graph illustrating the market size and age/gender based morbidity is provided below.

*Health Market Impact of Employer Migration to the Individual Market
May 8, 2017*





As the graph shows, the weighted cost index is much higher in the individual market purely due to the age/gender mix. This translates into higher expected costs for the individual market which in turn translates into higher premiums. It is important to note that the actual cost difference between the two markets may exceed the age/gender cost index, as some cost differences may be attributed to other market factors including anti-selection.²⁰ An age/gender shift toward the employer market will improve the morbidity of the individual market and lower costs.

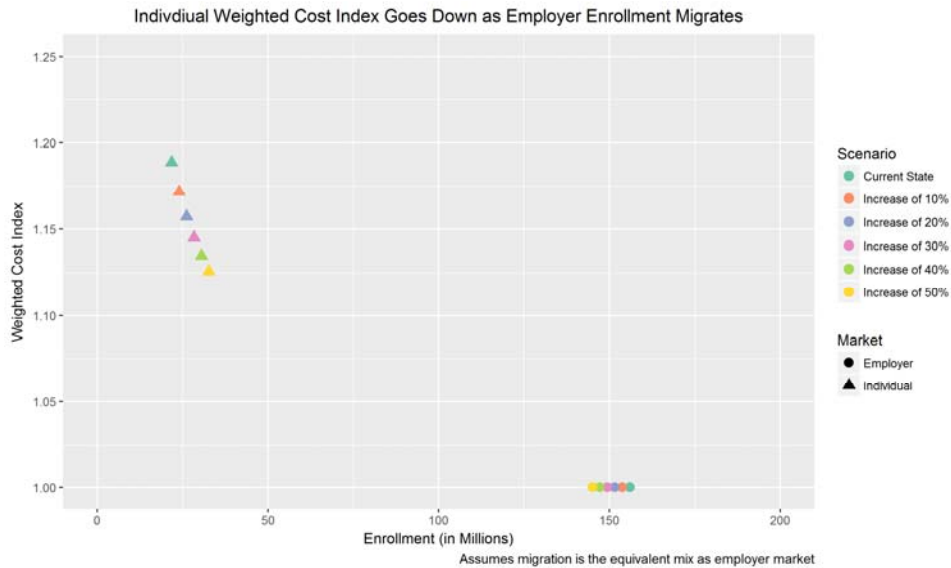
Migration Impact

The final piece of our analysis looks at how the morbidity of the individual market will change as individuals from the employer market move to the individual market. To do this, we assumed a multiple of a 10% increase in enrollment to the individual market from the employer market. In addition, it is assumed that the flow of individuals from the employer market to the individual market is of the equivalent mix of the employer population. The graph below depicts what happens to the weighted cost index as the migration happens. The values from the graph above are shown as well under "Current State".

²⁰ A morbidity comparison of the individual and small group markets is illustrated later in this section using HHS-HCC methodology; at the time of this report, this measure only exists for the ACA individual and small group markets for 2014 and 2015. The 2016 results will be released June 30, 2017; preliminary results were published April 11, 2017.

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017





As the graph shows, the individual weighted cost index decreases as individuals from the employer market migrate. Holding to our uniform migration assumption, the employer weighted cost index remains at 1.000.

In addition to the analysis and numbers shown above using public data, we tested the above analysis using a large AHP proprietary dataset with both individual and group experience. The age curve, age/gender mix of the commercial group population and age/gender mix of the individual population were all comparable to the public data.

Balanced Risk Pool

The anti-selective nature of purchasing individual coverage and the variable incentives of the subsidy dynamics have created a fragile and unbalanced risk pool. Enrollment on a group rather than an individual basis is by nature less anti-selective. Enrollment of large segments of demographically mixed individuals will enhance balance to the existing risk pool and facilitate the enrollment of more young adults into the market. The current individual market is fragile due to the underlying enrollee incentives and the bias in the risk adjustment methodology that penalizes insurers for enrolling healthy individuals. To describe these dynamics succinctly, we are in "a situation where we all want young people to enroll in the market with only two exceptions: young people and the health plan that would likely enroll them."²¹ Migration of large group employees would provide a cross-section of individuals of different ages and facilitate balance.

²¹ "ASOPs, Anti-Selection, Affordability and ACA Alternatives" www.soa.org/sections/health/health-newsletter/ - Health Watch, November 2016

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



Health Status Impact

Our analysis objectively measures the migration impact on the individual market based on the age and gender composition of the employer group market. As alluded to earlier in this section, the individual market may be subject to a less healthy enrollment mix outside of the age and gender composition of the market. While there are no measures distinctly reported from the data in our analysis, CMS has published various statewide statistics for 2014 and 2015 associated with the risk adjustment methodologies for both the individual and the small group markets. Preliminary 2016 statistics were published April 11, 2017.²² We utilize these published reports to provide an indication of the relative morbidity of the individual and small group market in each state.

A basic comprehension of the risk transfer formula within the risk adjustment methodology is necessary to understand this comparison. The risk adjustment methodology has two components, a risk adjustment model which assigns a risk score to everyone in the risk pool and a transfer formula which creates budget neutral transfer payments between insurers to reflect variances in unallowable risk differences. Conceptually, the transfer formula is developed to not redundantly award insurers for risk differences that are embedded in allowable rating factors.

The formula is based on a comparison of risk-based premiums and allowable premiums prescribed by the ACA rating rules. The measure of the risk-based premium is the plan liability risk score (PLRS) which includes age/gender, medical diagnoses, and benefit value. The allowable premium includes an allowable rating (ARF) factor which is reflective of age and an actuarial value (AV) factor which is reflective of benefit value. The ARF accounts for allowable age rating which only partially compensates for risk variation based on age. Both sides of the formula include identical factors for geography and induced demand.

For the individual and small group markets in each state, we compare the ratio of the PLRS to the product of the ARF and AV for each year. This is an indication of the risk-based premium factors relative to the allowable premium factors. This comparison provides a loose indication of the morbidity level in the individual market relative to the group market. There are limitations with this comparison; the individual market PLRS is inflated by inclusion of additional factors applicable

²² https://www.cms.gov/CCIIO/Programs-and-Initiatives/Premium-Stabilization-Programs/Downloads/InterimRAREport_BY2016_5CR_033117.pdf



related to enhanced values of Cost-Sharing Reduction²³ plans. Both markets are expected to have a higher PLRS in states that allowed transitional policies, as healthier individuals and groups would be more likely to retain those policies and not be included in the ACA risk pools. The individual market is also expected to have a higher average PLRS in states that did not expand Medicaid, as some otherwise eligible Medicaid recipients (generally considered to be less healthy) could receive subsidized coverage in the individual market.

The table below illustrates the straight average relativities of the Individual normative risk to the Small Group normative risk. Normative risk is defined as $PLRS/(ARF \cdot AV)$ ²⁴. For each state category and both years, the individual normative risk is considerably higher than the small group normative risk.

| State Category | 2014 | 2015 | 2016* |
|---|------|------|-------|
| Transitional Medicaid Expansion States | 1.22 | 1.14 | 1.14 |
| Transitional Non-Medicaid Expansion States | 1.27 | 1.22 | 1.25 |
| Non-Transitional States | 1.19 | 1.09 | 1.12 |
| * Based on preliminary results published April 11, 2017 | | | |

The graphs on the next page illustrate the relative consistency of the normative risk comparison for each state within each category. The graphs suggest that, after normalization for age and benefit value, the individual market has a higher risk population than the small group market. This analysis, while limited in scope, lends support to our finding that migration of workers from group markets would improve the individual risk pool composition.²⁵ The 2016 statistics are preliminary; Hawaii statistics were not published as the insurer submitted data did not pass the quantity threshold.

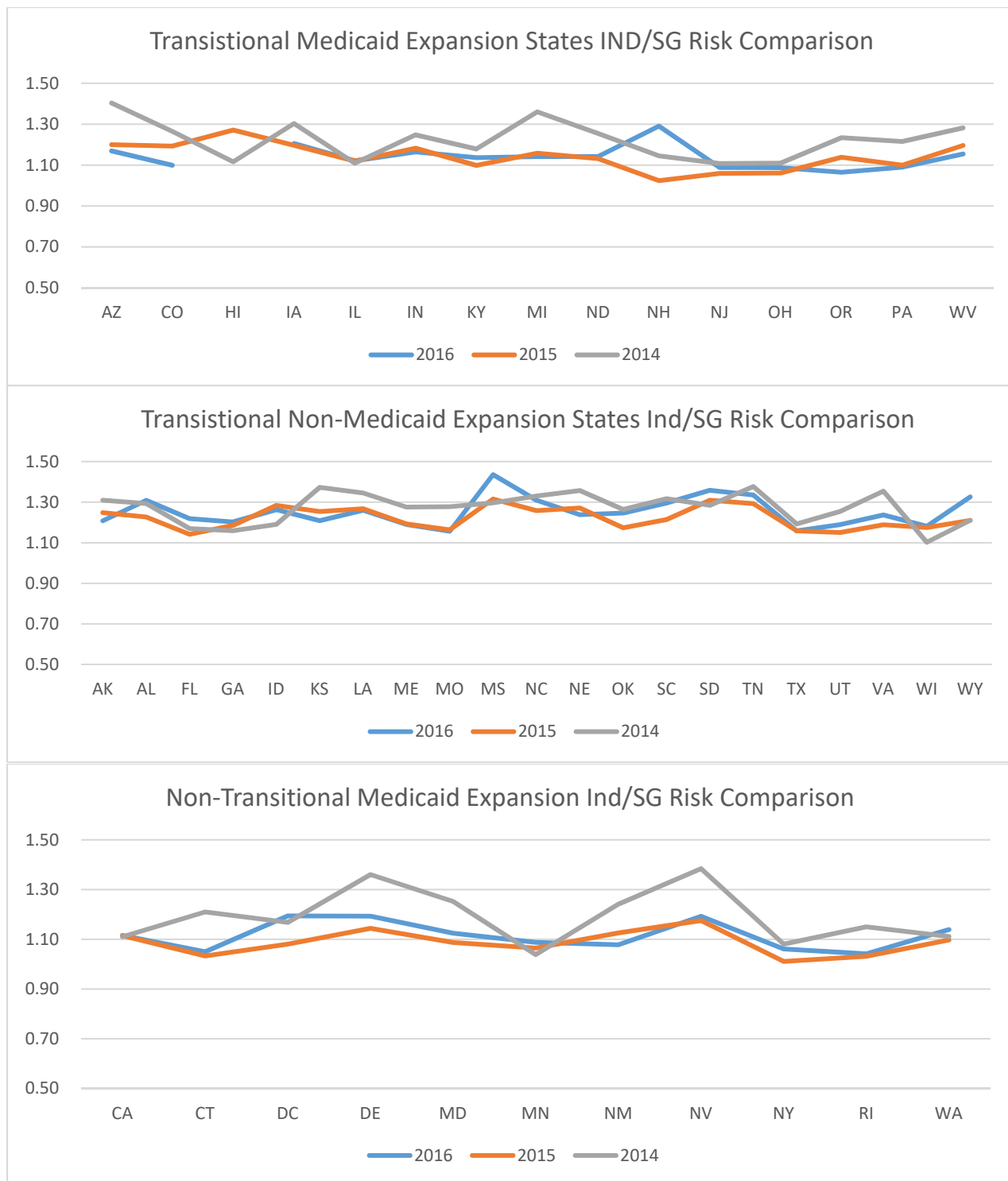
²³ Individuals with incomes below 200% of the Federal Poverty Level have cost-sharing subsidies that are believed to induce demand due to lower out-of-pocket payments for medical services. The expected additional costs due to this demand is built into the risk scores for these individuals.

²⁴ Arkansas is excluded from this analysis as the “private market option” waiver places Medicaid enrollees into the individual risk pool and skews the PLRS.

²⁵ 2014 is generally more volatile as it was the first year of the new markets. Our analysis did not explore varying dynamics of each state. For example, the higher differential in New Hampshire in 2016 may be due to Medicaid expansion members being moved into the individual market.

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017





*Health Market Impact of Employer Migration to the Individual Market
May 8, 2017*



Impact to Stakeholders

Employers. Employers have more options with expanded choices accessible in the individual market. These increased options allow tailored benefits and opportunities for cost savings. Additionally, employers are not at risk for higher claim costs of anti-selective COBRA coverage.

Employees. Employees and dependents benefit from having a wider array of choices available in the individual market. They also enjoy portability if they separate from their employer. These additional options may encourage more employees and dependents to obtain health insurance.

Insurers. Commercial health insurers joined their government program counterparts in 2014 in a less comfortable world of developing following year premium rates far in advance of their effective dates, without the opportunity for mid-year corrections. Most commercial health insurers have more familiarity and comfort with group coverage and consistent, stable populations. Many have been surprised with the resulting claim costs and risk adjustment results in the individual market. Migration of workers from large employers into the individual market would provide a lower risk and a less volatile individual health insurance population.

States. State insurance departments have struggled with new federal oversight and modifications of their rate review processes. The volatility of the risk adjustment results has been a major challenge and some states have been surprised by rapidly developing solvency concerns. Last year, the state of New York released an emergency regulation to reverse “stabilize” the ACA impact in the small group market. Migration of group employees into the individual market would facilitate more stable financial performance and risk adjustment results.

Federal Government. The Hixme model utilizes the individual off-exchange market. Due to federal subsidies only being available on-exchange, the off-exchange market is smaller. As insurers are required to pool on-exchange and off-exchange experience in their pricing development, improvement in the off-exchange population will lower the on-exchange rates. This results in a lower subsidy outlay for the federal government.²⁶

²⁶ It is assumed that the traditional employer tax deduction applies in the group market and with the migration of employees to the individual market, so there is no change in federal outlays for the migrating group.

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



Section 6: Conclusion

The ACA increased the size of the individual market, primarily through the distribution of new tax subsidies to lower-income individuals. However, the market rules and subsidy mechanics decoupled the risk and premium relationships that insurers employ to charge appropriate and fair premiums. This has led to an unbalanced and unstable marketplace. Additional distribution channels that attract a more balanced population would increase the market sized and add to market stability.

We acknowledge the practical limitations of promoting sustainability in the ACA individual market without thoughtful legislative solutions. However, we expect positive changes to occur with the migration of employees and their dependents from the group to the individual market. We firmly believe that a larger individual market catalyzed by more employers accessing it will promote stability and encourage competition. Legislative changes would obviously shift some of these dynamics and alter our migration model, but a larger individual market infused with employer-influenced enrollment procedures will likely be less volatile and attract more insurers regardless of revisions to market rules.

Increased competition is a major goal of the ACA. Recently, some insurers have exited the individual market due to predictive difficulty, high claim costs and financial losses. Most insurers have experience and familiarity with selling insurance to employers. Many insurers were new to the individual market or not used to being exposed to a material risk in this market. Employer participation in the individual market will likely be well received by insurers who have a stronger comfort level with coverage facilitated through an employer arrangement.

The ACA individual market is the only long-term health insurance option for people who do not have insurance through their employer or a government program. It is in the public interest for the individual ACA marketplace to be attractive to both health insurers and a broad cross-section of eligible enrollees. Migration of employees from the large employer market would reduce the average age of the individual market and foster lower cost and more stability in the risk pool and the risk adjustment results.

Cost-saving opportunities have already attracted some large employers to begin to utilize the individual market for their employees. To our knowledge, the migration volume has not materially impacted the individual market risk pool in any state. Recent legislation (21st Century Cures Act) specifically licensed the use of Health Reimbursement Accounts to fund individual market premiums for

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017



small employers. Benefit managers for large employers remain confused with the legal guidance. Federal clarity on the tax implication of large employers accessing the individual market could spur migration and improve the risk pool composition.

Without meaningful positive legislative or regulatory changes (such as a return to actuarially sound premium level relationships) at the federal level, we expect sustainability of the individual market will continue to be a challenge without at least a catalyst for a different market distribution. Migration of workers from the large employer market would improve individual market sustainability for the reasons discussed within this report. Additionally, it would likely reduce some of the volatile risk adjustment results. Also, this development would likely provide a more comfortable and familiar market for health insurers that have exited or are considering exiting this market. New federal guidance on the permissibility of employers accessing the individual market would reduce confusion and reassure more large employers of the appropriateness and viability of utilizing the individual market as a coverage option for their employees.

We sincerely appreciate the opportunity to provide this report on the implications of changes to the individual marketplace and look forward to partnering with private and public stakeholders to solve the difficult challenges facing this important market.

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017

Page 24



Axene Health Partners, LLC
www.axenehp.com

Appendix A

In The Public Interest
September 2016

The Sustainability of the New American Entitlement: Actuarial Values and the ACA

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017

Page 25



Axene Health Partners, LLC
www.axenehp.com

The Sustainability of the New American Entitlement: Actuarial Values and the ACA

By Greg Fann

We were reminded of the importance of Actuarial Values in the Chairperson’s Corner of this publication’s January 2013 edition. I am talking about the virtuous kind, not the calculated results from a pesky spreadsheet. Steven Schoonveld clarified our professional obligation to objectively speak to the sustainability of the financing systems that we manage and to recommend necessary changes. Efficient use of funds, aligned incentives, long-term consumer affordability and equity among participants are fundamental concepts that we require for sustainable programs.¹

The Patient Protection and Affordable Care Act (ACA) has been with us for a few years now. As we are approaching the end of an initial three-year discovery period with temporary risk mitigators,² there have been an increasing number of questions raised by some health actuaries regarding the long-term sustainability of the individual market platform. An instructive article from a landmark Health Section publication analyzes the risks (from a health insurer’s perspective) of participation in the new ACA markets compared to pre-ACA markets and other major lines of business.³ Some major carriers have already caused concern by publicly suggesting a potential individual market exit in 2017 (in particular, United Healthcare has exited most ACA markets) due to predictive difficulty, high claim costs and financial losses.⁴ Market exits have been accelerated by a significant shortfall in risk corridor funds available⁵ due to government decisions to fund only those losses covered by risk corridor gains.

This article discusses the nature of the ACA sustainability challenges and illustrates the uniqueness of the ACA program in the American entitlement system.⁶

ACA BACKGROUND

The ACA, enacted by Congress in 2010, has brought numerous changes to health care markets, but the most notable impact is the transformation of a lower-risk, medically underwritten, individual market to a higher-risk, 2014-and-later, guaranteed-issue market without pre-existing condition exclusions or health status as an allowable rating factor. Federal subsidies of varying

amounts are available to some enrollees to offset the high cost of premiums and cost sharing. These subsidies represent the first major health entitlement spending intended to benefit Americans not eligible for the 1960s-era Medicare and Medicaid programs.

Due to the federal subsidies targeted at middle-income⁷ individuals and families, the size of the individual market has grown significantly among the middle-income population. In addition to the subsidy benefits, another enrollment incentive is the application of a tax penalty (individual mandate) to individuals without qualified health coverage. Surprisingly at odds with legislative intent to attract young, healthy enrollees and the noted sustainability requirements, the mathematical mechanics of the premium subsidy calculations are designed in such a way that federal provisions are more generous to older enrollees.⁸

The next two sections provide a background of the American entitlement framework and explore the unique elements of the ACA subsidies relative to other government programs.

HISTORY OF AMERICAN ENTITLEMENTS

While not necessarily comprehensive, the table below illustrates a history of major entitlement legislation in the United States. As suggested in the table, American public assistance and social insurance programs have focused on serving vulnerable populations and can be grouped into two broad areas, Financial Security and Health Care.

Entitlement spending has grown each year due to population growth, general inflation, increased health care inflation, longevity increases, the Baby Boom generation, and the addition and expansion of major government programs. Budget pressures are significant at the federal and state levels; significant growth of federal entitlements (50-year average annual growth of 9.5 percent from 1960 to 2010⁹) continues to challenge our fiscal systems, and there are legitimate concerns regarding the long-term viability of current programs. In particular, since 1960, the advent of Medicare, Medicaid, Medicare Part D, Earned Income

| Population | Financial Security | Health Care |
|---------------|------------------------------------|--------------------------|
| Elderly | Social Security (1935) | Medicare (1965)** |
| Low Income | Subsidized Shelter & Food (1930s)* | Medicaid (1965)*** |
| Disabled | Social Security (1956) | Medicare (1965) |
| Middle Income | Earned Income Tax Credit (1975) | ACA Subsidies (2010)**** |

* Various programs

** Prescription Drug Benefits (Part D) added in 2006

*** Funding shared with states; eligibility rules vary greatly across states; ACA (2010) provided additional federal funding to Medicaid for a newly eligible population (in states that chose to expand)

**** Only available to individuals who do not have access to “affordable” employer-based coverage, either by themselves or through a family member

Tax Credits, and significant Social Security enhancements in the 1970s, have all contributed to the explosive growth in entitlement spending. It was in this challenging environment in 2010 that a current program (Medicaid) was expanded to cover a previously ineligible population (low income, able-bodied, non-custodial adults) and a new entitlement program was developed to partially subsidize health care premiums and costs in an attempt to make health insurance affordable and an attractive value across the income spectrum.

In spite of the significant cost challenges, the recognition that access to affordable health insurance is good for society, coupled with the number of uninsured Americans and the high cost of health insurance, prompted a divided Congress, with direction from the Obama administration, to inject federal funding into the individual health market and overhaul the market rules and pricing structures in the process.

THE ACA ENTITLEMENT

The new entitlement program, offering premium and cost-sharing subsidies to middle income Americans, is a 21st century American experiment unlike any financing mechanism that has been tried before. All prior entitlement legislation has mostly offered cash assistance or benefits that were of inconsequential direct cost to beneficiaries. There have been some notable participation fees, Medicare Part B premiums, for example, but they have generally paled in comparison to the expected benefits. The ACA subsidies formula does not follow this pattern. Due to a contentious debate on the legislation and a political requirement for deficit neutrality (as scored by the Congressional Bud-

get Office, before dynamic scoring was in play), available federal funds to provide the desired assistance were limited. Congress decided to provide partial premium assistance to individuals and families with incomes up to 400 percent of the Federal Policy Level (FPL). Material cost sharing assistance was also provided up to 200 percent of the FPL.¹⁰

The premium assistance formula is complicated and certainly unusual, relative to traditional government and employer provisions for health benefits. Rather than provide a fixed dollar amount (defined contribution or premium support), contribute a percentage of the premium (an employer-subsidized example) or simply fund the cost of benefits (traditional fee-for-service), government outlays are determined by an indirect calculation that requires a collection of market rates and personal income as inputs. The methodology works like this: health plans participating in a given market submit benefit options (falling into four value tiers, though health plans are not required to offer benefits in each tier) and rates for state review. The state reviews the filings and rates and either approves rates as proposed, rejects the filing, or approves the filing at another rate level (usually lower).

The approved rates for all health plans are then aggregated and the second-lowest-priced plan in the second-lowest value tier is determined to be the benchmark plan. Affordable coverage for each enrollee is determined based on a sliding scale percentage of income. An enrollee can purchase the benchmark plan with an enrollee contribution equal to the calculated “affordable” percentage of his/her income. The remaining premium (benchmark plan premium rate minus enrollee contribution) is the federal subsidy. Enrollees can carry the dollar amount of this subsidy to other plans, either within the same value tier or not, and purchase less expensive or more expensive coverage.

A brief illustrative example of the subsidy calculation methodology is demonstrated below; more extensive calculations can be found in the May 2014 edition of *Health Watch* and the December 2015/January 2016 edition of *The Actuary*.

Figure 1 illustrates the gross monthly premiums for two sample companies, A and B, offering plans in the two lowest-value tiers to sample individuals. Bronze is the lowest tier; Silver is the second-lowest tier.

Figure 2 illustrates the subsidy calculation for a particular income level and age. This is determined by calculating the maximum monthly contribution that an enrollee pays for the benchmark plan (the second-lowest-cost silver tier plan, or ‘B Silver’). Assuming the maximum contribution percentage of 7.50 percent for an individual with an income of \$48,000 (reasonable approximation but not representative of any year), the maximum monthly contribution for that individual is \$300 [$\$48,000 \times 7.50\% / 12$]. The calculated subsidy is the gross monthly pre-

The new entitlement program, offering premium and cost-sharing subsidies to middle income Americans, is a 21st century American experiment unlike any financing mechanism that has been tried before. ... The premium assistance formula is complicated and certainly unusual, relative to traditional government and employer provisions for health benefits.

Figure 1

| Age | Gross Monthly Premium | | | |
|-----|-----------------------|----------|----------|----------|
| | A Bronze | A Silver | B Bronze | B Silver |
| 24 | 270 | 315 | 300 | 350 |
| 64 | 810 | 945 | 900 | 1050 |

Figure 2

| Age | Subsidy Calculation | | | |
|-----|---------------------|---------------------------------|----------------------|---------|
| | Income | Maximum Contribution Percentage | Maximum Contribution | Subsidy |
| 24 | 48,000 | 7.50% | 300 | 50 |
| 64 | 48,000 | 7.50% | 300 | 750 |

Figure 3

| Age | Net Monthly Premium | | | |
|-----|---------------------|----------|----------|----------|
| | A Bronze | A Silver | B Bronze | B Silver |
| 24 | 220 | 265 | 250 | 300 |
| 64 | 60 | 195 | 150 | 300 |

mium of the benchmark plan minus the \$300 maximum contribution from the enrollee.

Figure 3 illustrates the net monthly premiums that enrollees pay for each plan in the market after subtracting the subsidy from the gross monthly premiums.

ACA IMPLICATIONS FOR BENEFICIARIES AND HEALTH PLANS

The result of all of this is different subsidy levels, which vary primarily by age, income, and geographic area, for all enrollees. Significant leveraging of the premium subsidy produces unintended results, where older enrollees pay less for certain benefit plans (those with lower gross premium than the benchmark plan) than younger enrollees at the same income level.¹¹ Consequently, the varying relationships between the subsidy amounts and the full premium create enrollment incentives for some and disincentives for others.¹²

The high cost of health insurance for enrollees who are not heavily subsidized has undoubtedly contributed to the lower than expected enrollment.¹³ These disincentives trouble policymakers and insurance companies alike. In addition to premium levels, consumer complaints have also been focused on high cost

sharing and inadequate networks, both of which have exacerbated enrollment concerns. Erosion of enrollment, especially among younger and healthier people, could complicate risk pool and pricing assumptions. Health plans need to be concerned with not only their own plan enrollment, but also the overall market enrollment for the state, due to the inter-company risk adjustment transfer process.

It has been suggested by health actuaries and other commentators that 2017 may be the telling year to evaluate the market conditions based on carrier participation, as health plans evaluate two years of transitional experience before committing to participate in a riskier market without the temporary risk mitigators. A conclusive understanding may take longer to develop as markets do not change instantaneously. Health plan participation in this high profile market is more involved than an isolated business decision based on a financial forecast. There have been external pressures for health plans to participate in the ACA marketplace since program inception, but the potential of major players to exit may trigger more forceful coercion.¹⁴

From a beneficiary perspective, the significant contributions (premiums and cost sharing) required of many enrollees to receive entitlement benefits is a new phenomenon. Reliance on market prices and consumer behavior to determine inputs to government outlay formulas is new as well. Unlike other entitlement programs, proposed solutions to ACA concerns do not fall in line with traditional thinking of Congressional spending or program adjustments. Since the passage of the ACA, the focus from Washington has been promotion of the program (sometimes targeted at younger ages) rather than increased spending to shore up perceived gaps in the program.¹⁵ This is unusual relative to other programs; the government has not launched an advertising campaign and the President has not solicited contributions to convince people to sign up for Social Security or Medicare (low enrollment is not considered a potential threat), but the budget challenges are frequently discussed.¹⁶ Government actuaries opine every year on the financial outlook of these programs, but the major sustainability inputs are macroeconomic in nature. Suggested changes almost always fall in the realm of adjusting spending formulas or benefits.

In many respects, the uniqueness of the ACA subsidies as an entitlement is the reliance on market forces rather than legislative commitments to meet demographic expectations and economic realities. It is important to understand the current data, but more important to understand the various incentives in effect that will continue to shape the size and nature of the individual market. In my opinion, this unprecedented experiment will require an informed, ongoing actuarial viewpoint (or, preferably, multiple viewpoints) focused on sustainability to preserve the individual health market and the reputation of our profession.

SUSTAINABILITY MEASURES

As discussed in the opening paragraph, our work requires adherence to certain values. Reflecting on these values and our obligations to stakeholders and the public, what are some of the potential concerns with each value in our response to the ACA? Let us revisit each point:

1. **Efficient use of funds:** Federal funds are allotted with the intention of making health care affordable. The mechanics of the ACA subsidy calculations create greater benefits for some enrollees and little or no benefits for others. Could the funds be reallocated in such a way as to be more “efficient”? That is an interesting question, and one that individual states may consider if they choose to take advantage of a new waiver opportunity that will allow distribution of federal funds in a more desirable way.¹⁷
2. **Aligned incentives:** There are incentives that promote coverage for some segments of the population. These incentives vary by age, and may promote an older individual market and a younger group market as employees have a new incentive to retire early and younger individuals may be motivated (due to higher cost of guaranteed issue market, restricted age bands, and subsidy mechanics) to seek opportunities for employer-sponsored coverage.¹⁸ Unfortunately, there are also incentives for individuals to reduce work due to “subsidy cliffs” when earning additional income could significantly reduce the subsidies available. The Congressional Budget Office anticipates that employer and employee incentives embedded in the ACA will reduce work hours by 1.5 to 2.0 percent from 2017 to 2024.¹⁹
3. **Consumer affordability:** For some individuals, enrollee premium contributions are very low or even zero in extreme cases. Due to the “family glitch” and the affordability measure,

The most challenging period for the ACA is still ahead of us, with a riskier market for all participating health plans, waning enthusiasm as the initial promotional value wears off, and a new president who is not personally identifiable with the program.

“affordable coverage” may be available to the employee but not to the family members of an employee who has affordable employer-sponsored coverage.

4. **Equity among participants:** The nature of the subsidy calculations results in greater subsidies and stronger coverage incentives for older individuals. The resulting net premiums fall short of the principle that “differences in rates reflect material differences in expected cost for risk characteristics.”²⁰ As mentioned above as an “efficient use,” federal funds could be distributed more equitably through a state waiver.

The three-year discovery period allowed health plans to test the new program with some risk protections that will soon expire. This provided an incentive to be more aggressive in a price sensitive market. Clearly, health plans will assume more risk in the future. There are also non-financial aspects to consider. It is my (non-actuarial) opinion that enrollment results have benefited from heavy promotion (partially offset due to operational struggles and some negative commentary), general awareness, and excitement related to a new program that has received tremendous attention.

The most challenging period for the ACA is still ahead of us, with a riskier market for all participating health plans, waning enthusiasm as the initial promotional value wears off, and a new president who is not personally identifiable with the program. In my opinion, a long-term sustainability viewpoint will recognize the financial implications and inherent incentives, acknowledge the need of positive outcomes for both health plans and consumers, and appropriately discount the early emotional activity associated with this new marketplace.

ACTUARIAL CHALLENGES

I do not believe it is an overstatement to suggest that the new challenges the ACA creates for health actuaries present greater professional risk than any previous developments in the health care market. Many of these challenges, including developing pricing assumptions for an unknown population in a new market environment with an unknown revenue component,²¹ have been primary topics in health actuarial forums since the ACA regulations were developed.

A different type of challenge is the subjective scrutiny of actuarial practice and attempted coercion to breach our objective professional obligations to justify a particular policy or point of view. If you have followed the career of actuary Richard Foster, you recognize that this is not an entirely new occurrence.²² Pressure from outside of our profession is not limited to policy-related issues. A 2012 survey of American Academy of Actuaries members indicated that the overwhelming ethical concern from a list of 18 choices was “responding to pressure from principals and/or management to select inappropriate assumptions used

in pricing or reserving.”²³ This result was strikingly consistent across all practice areas and employment types.

As health actuarial work has become more public and more connected to policy, the criticism has heightened. The partisan nature of the legislative development and the tendency of people on both sides of the debate to misrepresent (perhaps unintentionally) the law’s impact and twist every data point to their liking has complicated the public’s understanding of the legislation. By and large, the actuarial response has been more measured and actuaries have refrained from drawing premature conclusions.

The politically charged nature of the law has complicated our practice since inception, and the attention and subjective viewpoints have not dampened. Criticism of a 2013 Society of Actuaries-sponsored study on expected claim costs cited actuaries as biased by virtue of being primarily employed by insurance companies and, therefore, aligned with the insurance lobby. The rate review process has brought more oversight and attention to actuarial work and perhaps has made us better—or at least more diligent—at our craft. Even state regulators, who have historically been viewed as the reviewers of actuarial rate development, but not reviewees themselves, are now under a watchful eye as “what used to be a purely analytical exercise is now peppered with political overtones.”²⁴

I believe that this new reality is not a temporary environment that will settle as the ACA market matures and stabilizes.²⁵ Future legislation and regulations will demand our opinions and analyses with the same degree of attention. It is interesting to note that few voices proclaim the ACA to be a solution or a final destination. It is either “a step in the right direction” or bad legislation that should be “repealed and replaced.” As we have seen with financial markets, government intervention drives marketplace changes, which, in turn, creates a recurring need for more government intervention. The ACA is a major change in federal health legislation; market reactions will necessitate legislative adjustments, and actuaries will be asked to understand the implications, measure the impact, and go about their daily duties with a high-intensity, post-ACA-level, spotlight on their work. The challenge of being asked to do more analysis with less information, while under a more intense and subjective oversight microscope, is our present and will be our future.

CONCLUSION

20th century entitlement programs now comprise more than two-thirds of the unified federal budget. As expressed by some commentators, the growth of entitlements could potentially impact other budgetary items and ultimately harm national security and the overall economy.²⁶ The sustainability of these programs is consistently measured in a traditional way, projecting benefit costs and allocating spending. If necessary, Congress will make

As sustainability is threatened by market forces rather than federal budget limitations, the need for Actuarial Values is more acute.

adjustments, sometimes crowding out other important items in the federal budget.

The ACA subsidies need to be evaluated through a different framework. As sustainability is threatened by market forces rather than federal budget limitations, the need for Actuarial Values is more acute. We must appreciate the various incentives for buyers and sellers in the market to understand the long-term sustainability equation. It is important to note that these incentives reach beyond the individual health care market; they impact the labor market and the overall economy. Employers now have new considerations when hiring workers, setting work hours or providing health benefits, and employees have new incentives to seek more work or different work, reduce their work hours, or retire earlier. The high level of health care costs and the disparate subsidies available through the ACA create various incentives that may have long-term implications on the demographics of the labor market,²⁷ which, consequently, will impact the demographics and, potentially, the sustainability of the individual health market.

Actuaries have a strong history of identifying unsustainable models and offering their honest assessments. We do not have to look far for a classic example; a part of the ACA known as the Community Living Assistance Service and Supports Act created a voluntary long-term care program. Due to potential adverse selection and little government support, the actuarial community quickly deemed the program unworkable; it was repealed in 2013. The initial ACA impact to the individual health market has been more nuanced, although that did little to deter early strong conclusions.

We are now at a critical juncture on the ACA timeline, developing pricing assumptions (at the time this article was written) from transitional experience for the 2017 rating period, the year after which two of the initial risk buffers sunset. There is much at stake, and it is imperative for actuaries to boldly offer our objective approach. Our technical skills, experience, and deep knowledge of the regulatory details equip us to submit expert opinions.²⁸

The implications of this law are complicated and require a comprehensive appreciation of incentives for health plans, employers, employees and individuals. The majority of comments that have reached a general audience are not from objective

sources and have obfuscated public understanding; in fact, it was the repeated misperceptions of the legislative impact that initially piqued my interest in writing about the program details. More than other entitlement programs, measuring the sustainability of the ACA is within the actuarial domain. I will continue to advocate for the objective voices of health actuaries to be recognized as trusted experts. I hope you will join me in this endeavor. ■

Author's Note: The views expressed herein are those of the author alone and reflect current information as of May 2016. They do not represent the views of the Society of Actuaries, Axene Health Partners, LLC or its consultants, or any other body.

A thorough examination of the technical components discussed in this article, along with some suggestions on how actuaries can contribute to the public good by correcting simplified explanations and common misconceptions, was published in the May 2014 edition of Health Watch.²⁹



Greg Fann, FSA, MAAA, is a senior consulting actuary with Axene Health Partners, LLC in Murrieta, Calif. He can be reached at greg.fann@axenehp.com.

ENDNOTES

- ¹ "Actuarial Values" – <https://www.soa.org/Library/Newsletters/In-Public-Interest/2013/january/ipi-2013-iss7.pdf> January 2013.
- ² "Temporary Risk Corridors" provide a symmetric sharing of gains and losses from 2014 to 2016. "Transitional Reinsurance" provides specific stop-loss protection against high claims in the individual market from 2014 to 2016. Each of these programs were intended to encourage carrier participation and stabilize premiums in the early years of the new market.
- ³ "The Individual Market and ACA Products: Starting from First Actuarial Principles" – <https://soa.org/news-and-publications/newsletters/health/pub-health-section-newsletters-details.aspx> The ACA@5 – August 2015
- ⁴ <http://money.cnn.com/2016/03/30/news/economy/obamacare-patients-blue-cross-blue-shield/index.html>
- ⁵ <http://www.modernhealthcare.com/article/20151001/NEWS/151009996>
- ⁶ In federal budget discussions, spending on public assistance and social insurance programs is collectively referred to as entitlement spending, or entitlements. An entitlement benefit suggests a legislated or established right. Entitlement benefits are, in a sense, legally predetermined and outside of the annual Congressional appropriation process, which is often called discretionary spending.
- ⁷ For purposes of this article, "middle-income" is loosely defined as above the Federal Poverty Level, not eligible for Medicaid, and below 400% of the Federal Poverty Level.
- ⁸ "Implications of Individual Subsidies in the Affordable Care Act—What Stakeholders Need to Understand" <https://soa.org/news-and-publications/newsletters/health/pub-health-section-newsletters-details.aspx> May 2014
- ⁹ <http://www.usnews.com/opinion/articles/2012/12/19/the-shocking-truth-on-entitlements>
- ¹⁰ The US House of Representatives has filed suit against the Obama administration alleging that payment of the cost sharing assistance was not authorized. A federal judge ruled in favor of the House but stayed the ruling. As of May 2016, the cost sharing subsidies continue to be paid pending appeal. <http://www.politico.com/story/2016/05/house-gop-wins-obamacare-lawsuit-223121>
- ¹¹ "The True Cost of Coverage" – <http://theactuarymagazine.org/the-true-cost-of-coverage/>
- ¹² "Implications of Individual Subsidies in the Affordable Care Act—What Stakeholders Need to Understand" – <https://soa.org/news-and-publications/newsletters/health/pub-health-section-newsletters-details.aspx> May 2014
- ¹³ 2016 enrollment is roughly half of initial expectations. http://www.cbo.gov/sites/default/files/cbofiles/attachments/45231-ACA_Estimates.pdf
- ¹⁴ <http://www.courant.com/business/connecticut-insurance/hc-blumenthal-united-health-affordable-care-act-1216-20151215-story.html>
- ¹⁵ Entitlement legislation is not necessarily an easy process, but getting lawmakers to spend taxpayer money is easier than getting taxpayers to spend their own, particularly if they don't view the product as a good value. There is unanimous recognition that individual market sustainability requires continuous enrollment of young and healthy beneficiaries; hence, the strong promotion and frequent analysis of the market demographics.
- ¹⁶ There is still value in communicating benefit options to all eligible beneficiaries. Medicaid actuaries will point out the 'woodwork' effect; some populations are difficult to reach, and not everyone signs up automatically for benefits even if costs are minimal.
- ¹⁷ "Section 1332 Waivers. Coming Soon to a State Near You?" <https://soa.org/news-and-publications/newsletters/health/pub-health-section-newsletters-details.aspx> May 2016
- ¹⁸ <https://soa.org/Professional-Development/Event-Calendar/Podcasts/Health-Section.aspx#ep24> – Episode 14
- ¹⁹ <http://www.aei.org/publication/the-aca-and-its-employment-effects/>
- ²⁰ Actuarial Standard of Practice 12, 3.2.1 http://actuarialstandardsboard.org/wp-content/uploads/2014/07/asop012_101.pdf
- ²¹ Revenue includes the positive or negative adjustment from the risk adjustment process which is a premium redistribution among health plans. The transfer payment amount depends on the demographic and health status makeup of the market is not known until the middle of the next year. For example, health plans develop 2017 rates in early 2016 based on 2015 experience with knowledge of the 2014 risk adjustment settlements.
- ²² <http://www.forbes.com/sites/merrillmatthews/2014/09/30/medicares-former-chief-actuary-speaks-out-about-its-challenges/#40d795a4507f>
- ²³ http://actuary.org/files/Key_Ethical_Concerns_Facing_the_Actuarial_Profession.pdf
- ²⁴ "A Regulatory Perspective on Rate Review Before and After the Affordable Care Act" – <https://soa.org/news-and-publications/newsletters/health/pub-health-section-newsletters-details.aspx> The ACA@5 – August 2015
- ²⁵ As discussed throughout this article, long-term market stabilization is not a guarantee. An optimistic viewpoint is that pricing an unknown market in 2014 was difficult, but that a few years of experience to review and price corrections will lead us to a stable marketplace. A less optimistic viewpoint is that legislative or regulatory corrections will be required to facilitate long-term stability in this market.
- ²⁶ <http://www.usnews.com/opinion/articles/2012/12/19/the-shocking-truth-on-entitlements>
- ²⁷ <https://soa.org/Professional-Development/Event-Calendar/Podcasts/Health-Section.aspx#ep24> – Episode 14
- ²⁸ "The Truth-Seeking Debate" – <https://soa.org/Library/Newsletters/The-Actuary-Magazine/2015/june/act-2015-vol12-iss3-tofc.aspx>
- ²⁹ "Implications of Individual Subsidies in the Affordable Care Act—What Stakeholders Need to Understand" – <https://soa.org/news-and-publications/newsletters/health/pub-health-section-newsletters-details.aspx> May 2014

Appendix B

List of Assumptions and Public Data Sources

- We removed individuals over age 65 from our analysis for several reasons. First, most individuals in the United States are eligible at age 65 for Medicare. Regardless of whether Medicare is primary or secondary, this affects any cost analysis by age when analyzing claims data. Second, we leveraged our analysis by referencing the “Health Care Costs – From Birth to Death” research paper. This research paper used separate analyses for individuals over and under age 65. The populations at age 65 and over in the commercial individual market and employer market represents a small percentage and thus would not materially impact our results.
- We used the information from Chart 5 from the “Health Care Costs – From Birth to Death” research paper which is 2010 group PPO/POS experience from the commercial dataset held by HCCI. One reason for this was it had both the cost curve by age and gender as well as the distribution of members. We validated the cost curve and enrollment distribution using more recent propriety data and the independent results were similar.
- The results from the ASPE marketplace enrollment snapshot was used as a proxy for the age/gender mix of the individual market. The snapshot includes only on-exchange ACA enrollment in federally facilitated marketplaces, while the individual market includes ACA off-exchange, transitional and grandfathered plans. Demographic information for off-exchange plans are not publicly reported. Each one of these segments within the individual market might have a different age/gender mix. Regardless of the exact age/gender mix, the data available indicates the individual member population is materially older than the member population for the employer market.
- We assumed a uniform migration of members from the employer market to the individual market. It was assumed that the migration population from group would have a comparable distribution by age/gender as the overall group population. If the migration varied by demographics, the impact on expected results would similarly vary.

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017

Page 32



Axene Health Partners, LLC
www.axenehp.com

Appendix C

Health Care Costs—From Birth to Death

Sponsored by
Society of Actuaries

Prepared by
Dale H. Yamamoto
June 2013

Part of the Health Care Cost Institute's
Independent Report Series – Report 2013-1st of Assumptions and
Public Data Sources

Health Market Impact of Employer Migration to the Individual Market
May 8, 2017

Page 33



Axene Health Partners, LLC
www.axenehp.com

Health Care Costs—From Birth to Death

**Sponsored by
Society of Actuaries**

**Prepared by
Dale H. Yamamoto**
June 2013

Part of the Health Care Cost Institute's
Independent Report Series – Report 2013-1

© 2013 Society of Actuaries, All Rights Reserved

This study was funded and supported by the Society of Actuaries, and is part of the Health Care Cost Institute's series of independent research projects using its commercial health care claims database. Any opinions and conclusions expressed are those of the author and not those of the Society of Actuaries or its members nor the Health Care Cost Institute. Neither the Society of Actuaries nor the Health Care Cost Institute make any representation or warranty as to the accuracy of the information.

Executive Summary

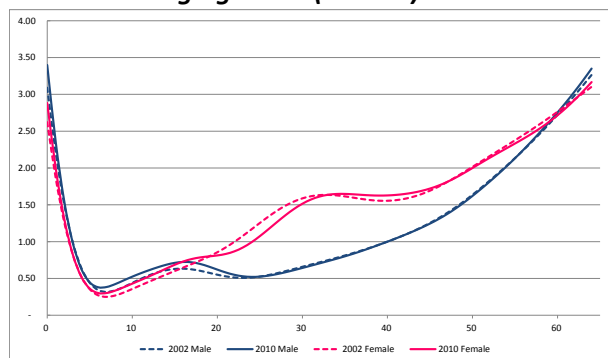
This study used commercial data held by the Health Care Cost Institute (HCCI) and Medicare fee-for-service data to analyze health care cost differences by age and their contribution to overall health care cost change. The commercial data includes claims from 2002 through 2010 and the Medicare data includes claims from 2006 through 2010. This analysis offers insights into the following questions:

- What is the impact of the aging of America and its contribution to historical health care cost trends?
- How will health care reform impact premium rates (specifically, the Affordable Care Act's limitation on premium rate differences between the highest and lowest age-based rate)?
- How might changes in age-related eligibility impact Medicare spending?
- What differences in costs exist by age and by different groups (e.g., gender, employee/dependent, group/individual and plan type)?
- How do various disease conditions impact costs by age?
- How can better understanding of age-related costs help improve actuarial valuations of retiree health care programs?

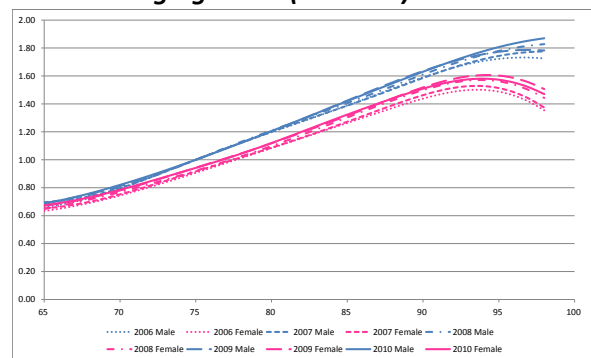
Overall

In general, the analysis shows that health care costs increase by age with the exception of the very youngest ages. Costs, on average, are very high in the first year or two of birth and drop significantly by age five. At that point, costs increase modestly through the teen years. Female costs then begin to accelerate more quickly during child-bearing ages and flatten out in the 40s before increasing again. Male costs are relatively flat in the 20s and begin to accelerate after age 30, but remain lower on a per person basis than females in the same age group. The “cross-over age” occurs in the early 60s, when per capita spending for males exceeds that for females. Medicare costs (excluding private and Medicaid-financed long-term care) for beneficiaries age 65 and older continue to increase with age. Males continue to have higher costs than females for whom per person costs start to decline around age 90.

Commercial Aging Curve (Chart 1)



Medicare Aging Curve (Chart 10)



The preceding two charts are from the main text of the report. Chart 1 shows the age/gender curve for the commercial population from birth to age 64. The Medicare Aging Curve (Chart 10) shows the continuing aging curve for the 65 and over Medicare population. Separate indices were developed for

the commercial and Medicare populations due to their different provider reimbursement rates (i.e., negotiated discount versus administratively set prices). Using indices rather than costs also allows for comparison between years. Both commercial and Medicare costs were based on “allowed charges,” which are the costs of health care services that reflect discounts (in the case of commercial plans) and include both the amounts owed by the health plan (or the federal government) and the insured member (or Medicare beneficiary).

Key Uses and Findings

1. The changing demographics of age and gender have contributed from 7 percent to 10 percent of the real growth in per capita health care costs (less than 0.5 percent per year) depending on the period studied. This is consistent with other studies’ findings.
2. Inpatient services showed the most variation in use by age, in particular, with female costs increasing during child-bearing ages and then decreasing until they begin to increase again in the mid-40s. (This study looked at costs by inpatient, outpatient, professional and outpatient prescription drugs.) Outpatient and prescription drug costs were relatively stable with exponential growth by age.
3. Chronic conditions in the young (under age 30) take a higher relative toll on that population than they do for the older population. For commercial members under age 30 identified with cancer or circulatory conditions, there was significant variation by age in the ratio of their costs to the costs of the entire population under age 30, and their costs were much higher on average. In contrast, when costs for members age 30 and older with three chronic conditions—cancer, circulatory and musculoskeletal conditions—were compared to the total cost of that population, results showed relatively stable ratios of those with the condition compared to all (around 2 to 1) members above age 30.
4. Between 2002 and 2010, an established pattern of an increase in health care costs for females in their child-bearing years (20-44) has shifted outward by three years – meaning that higher costs for women are occurring later in the child-bearing window. This may reflect well-documented recent trends of women delaying childbirth.
5. The age-related premium policy established by CMS in its implementation of the Affordable Care Act will increase premiums for younger individuals and decrease them for older individuals purchasing individual health insurance. By analyzing the underlying costs per age for the population (both male and female) and comparing it to the new approach for individual coverage purchased in state-based exchanges, we found that premiums for individuals in their 20s will subsidize the cost of health insurance for individuals in their 60s. For example, the average cost index for those age 21 through 29 is 27 percent higher under the CMS proposed age curve compared to 3 percent lower for those age 60 through 64.
6. Changes in the eligibility age for Medicare would raise the average per capita cost for the Medicare population because younger and relatively healthier beneficiaries would no longer be eligible. If the eligibility age were changed from age 65 to age 70 for example, while total Medicare spending would decline overall, the per capita cost would increase 12 percent because the 65 to 69 year old

participants are generally the lower cost members. The costs of that change would be borne by the federal government and beneficiaries through their subsidized premiums.

7. The future health care needs for a retiree vary by the retiree's current age and their expected lifetime, but are estimated to be about \$146,400 for someone currently age 65 with an average expected lifetime of 20 years (\$292,800 for a couple of the same age). That amount includes health care costs not paid for by the federal government through the Medicare program (including Medicare Parts B and C premiums). If they think they will live until age 90 (25 years instead of 20 years) they will need \$220,600 (or \$441,200 for a couple). These amounts are for the "average" retiree and do not include long term care costs that some retirees may incur.

From the government's perspective, they will spend, on average, nearly \$450,000 for the new age 65 Medicare beneficiary during their expected lifetime (20 years).

8. For retirees suffering from certain chronic conditions (cancer, circulatory and musculoskeletal), health care costs not paid for by the federal government through Medicare can easily exceed \$300,000 (twice the estimates for all individuals).

Contents

| | |
|--|----|
| Executive Summary..... | i |
| Overall | i |
| Key Uses and Findings..... | ii |
| Introduction | 1 |
| Overall Pre-Medicare Costs | 1 |
| Costs by Year | 1 |
| Costs by Insured Group..... | 3 |
| Costs by Product Type..... | 4 |
| Costs by Relationship | 4 |
| Unisex Cost Curve | 5 |
| Pre-Medicare Costs by Service..... | 7 |
| Inpatient Facility Costs | 7 |
| Outpatient Facility Costs | 8 |
| Professional Service Costs..... | 8 |
| Pharmacy Costs..... | 9 |
| Overall Medicare Costs | 10 |
| Costs by Year | 11 |
| Medicare Costs by Service | 12 |
| Inpatient Facility Costs | 12 |
| Outpatient Facility Costs | 14 |
| Professional Service Costs..... | 16 |
| Pharmacy Costs..... | 17 |
| Medicare Benefit Payments..... | 18 |
| Combined Net Medicare Costs | 21 |
| Commercial Medicare Data | 23 |
| Health Care Costs by Condition | 23 |
| Implications of Conditions | 27 |
| Five-Year Age Group Curve | 28 |
| Aging in Health Care Costs of the United States..... | 30 |
| Follow-Up Studies | 33 |
| Data, Methods and Assumptions..... | 33 |
| Data | 33 |
| Methods..... | 34 |
| Assumptions..... | 37 |
| Appendix | 38 |

Introduction

This study was made possible by detailed claims data available from the Health Care Cost Institute (HCCI) from its database of commercial medical claims and the five-percent sample of Medicare claims. The commercial data included claims for all services including inpatient, outpatient, professional and prescription drugs. The Medicare data included data for the fee-for-service members under the Medicare Hospital Insurance program (HI or Part A) and the Supplementary Medical Insurance program (SMI or Part B). Data was not available for the Medicare prescription drug program (Part D).

The commercial data included book-of-business data for three major health plan carriers with over 30 million members and \$130 billion in claims in 2010. The Medicare data for 2010 included 1.2 million members and over \$14 billion in claims.

Both the commercial data and the Medicare data are allowed charges. That is, they are the amounts that the benefit calculations are based on, after provider discounts, and before any plan design provisions are applied. Since there is a large difference in allowed charges between commercial carriers and Medicare that is documented in other studies, the aging curve analysis has been done separately for the two sets of data. In addition, this study also analyzed the age curve for the costs that Medicare does not pay (i.e., the Medicare allowed charge minus the Medicare benefit payment) as these are the amounts that other private payers may pay in supplemental coverage to Medicare.

Overall Pre-Medicare Costs

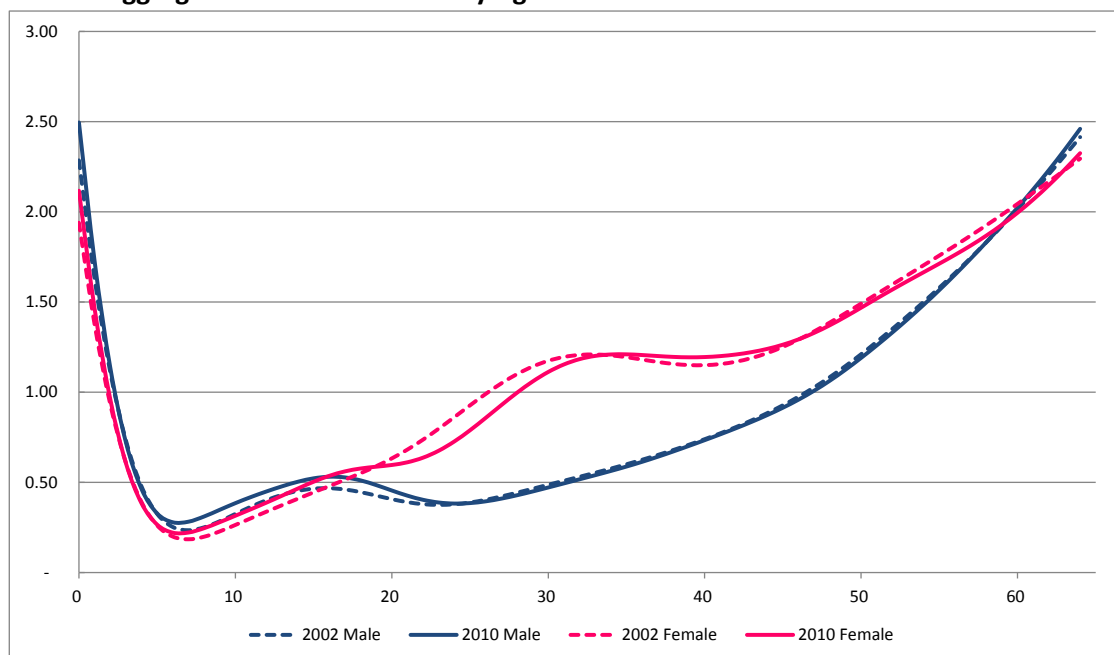
Commercial data from the HCCI database were compiled for calendar years 2002 through 2010. The data was separately compiled by insured group (individual versus employer-sponsored or group business), product type (HMO versus POS/PPO product lines) and by major diagnosis groups (by standard DRG for inpatient care and assignment based on major diagnosis codes for other services).

Per capita costs were summarized by single age and gender for each year. These costs were graduated using the Whitaker-Henderson method and are primarily shown in graphic form throughout this report. The costs were indexed to the average cost for each year weighted by the aggregate 2010 membership. Using the same membership as weights eliminates the effect of changing demographics over time. Detailed results are shown in tables in the appendix.

Costs by Year

The following chart shows the cost index for 2002 and 2010 for all insured groups, product types and diagnostic groups. Note that this was not a longitudinal study of the same members but an analysis of costs by age and gender for those enrolled in the plans in each year. That is, an annual snapshot of costs of then covered members.

Chart 1: Aggregate Commercial Costs by Age 2002 and 2010



At a high level, the age curve is not significantly different between the two years for this pre-Medicare population. There are two key findings from the above chart by comparing the 2002 lines to the 2010 lines. One, relative per capita costs have increased between 2002 and 2010 for both males and females from around ages 8 to 20. Two, the increase in costs for females have shifted almost three years for those in their 20s likely due to the delay in childbirth. This is consistent with other studies and anecdotal commentary. It is supported by the birth rate statistics from the U.S. Census Bureau. The following table shows the birth rate per 1,000 women for the same two years.

Table 1. Births per 1,000 Women¹

| Ages | 2002 | 2010 | % Change |
|----------------|------|------|----------|
| 15 to 19 years | 55.9 | 29.3 | - 48% |
| 20 to 24 years | 90.0 | 87.3 | - 3% |
| 25 to 29 years | 97.2 | 96.6 | - 1% |
| 30 to 34 years | 83.6 | 82.6 | - 1% |
| 35 to 39 years | 41.9 | 50.7 | 21% |
| 40 to 44 years | 11.9 | 12.6 | 6% |

The above chart shows decreased birth rates for women to age 34 and an increase for women 35 to 44 which are consistent with the change in the female age curve over the same ages.

In general, relative per capita costs are high in the first year of life and decline until around age 8 and remain relatively level until age 20 for females and 30 for males. There is a rapid increase in relative costs for females at child-bearing ages to about age 30 and the cost levels off during the 30s and early 40s and then begins to increase through to Medicare age. Whereas, male costs begin to increase at age

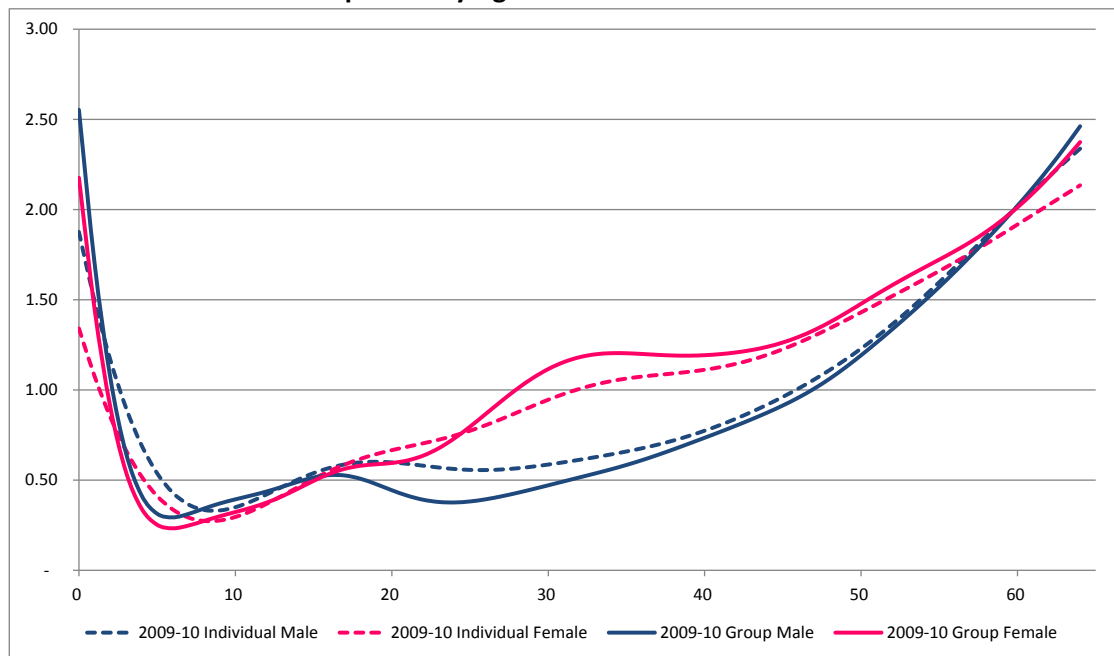
¹ U.S. Census Bureau. *Current Population Reports, Fertility of American Women*. Washington: U.S. Census Bureau, 2010.

30 and continue to increase through to Medicare age. Male relative costs are below female relative costs for most ages until they cross over at about age 60. The cross-over age has moved from age 61 in 2002 to age 59 in 2010. It is beyond the scope of this paper to speculate why this change has happened but it is interesting to also study the age curve by service (inpatient, outpatient, professional services and prescription drugs) as the cross-over ages are very different.

Costs by Insured Group

The following chart shows costs by individual versus group business for the 2009 and 2010 calendar years.

Chart 2: Individual and Group Costs by Age for 2009-10



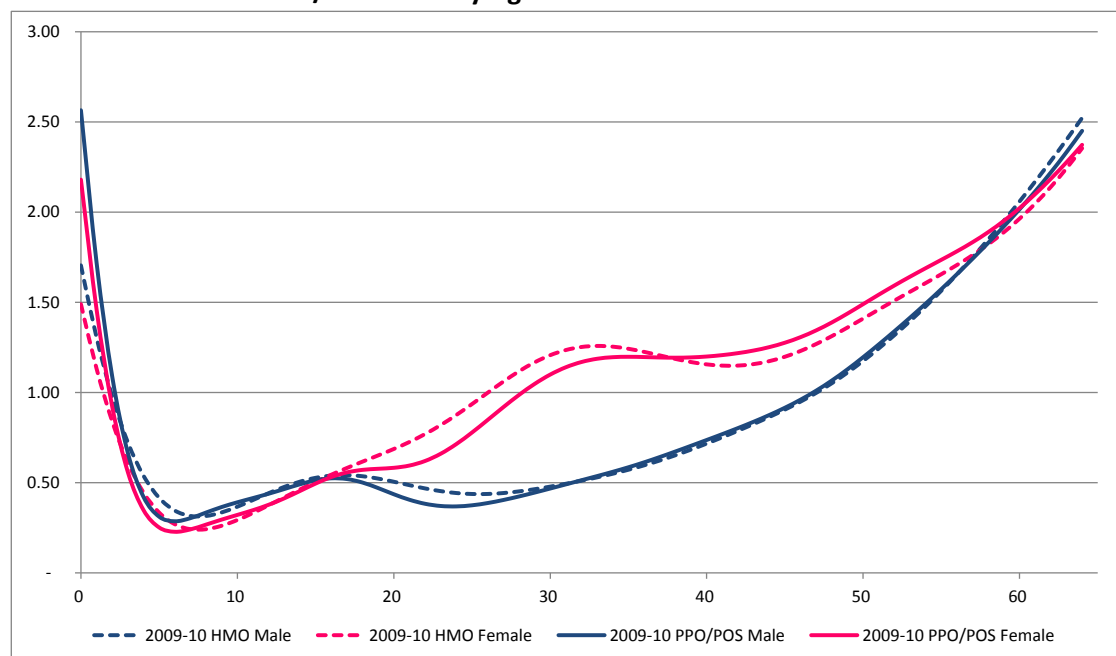
Individual and group business show similar relative cost patterns by age with the individual slopes slightly flatter than the group slopes. The maternity bump seen in the group age slope for females is less pronounced in the individual business and the index (i.e., costs relative each group's average) is generally less than the group market at most ages. This is likely because many individual plans do not cover maternity costs. The age slope for males are very similar for the two markets with slightly higher costs at the younger ages in the individual market compared to the group market that is likely reflecting risk selection in the market.

It is important to keep in mind that the differences in the age curve between individual and group business is not an indicator of cost relationships between the two business segments. Each business group's age curve is a representation of the relative differences in costs by age and gender within the business group. Therefore, it is valid to state that males aged 30 are a lower cost than females of the same age, on average, and are lower cost than older males for both the individual and group business segments. It is not valid to say that a male age 30 covered under an individual contract is higher cost than a male age 30 covered under a group contract.

Costs by Product Type

The PPO/POS versus HMO product type comparison is made with the group market because the individual market exposure in the collected data is not as robust as the group market. From an analysis perspective, focusing on just the group market eliminates any bias that there may be between the group and individual markets. The following shows the costs by PPO/POS and HMO plan types by age and gender for the 2009 and 2010 calendar years.

Chart 3: HMO versus PPO/POS Costs by Age for 2009-10



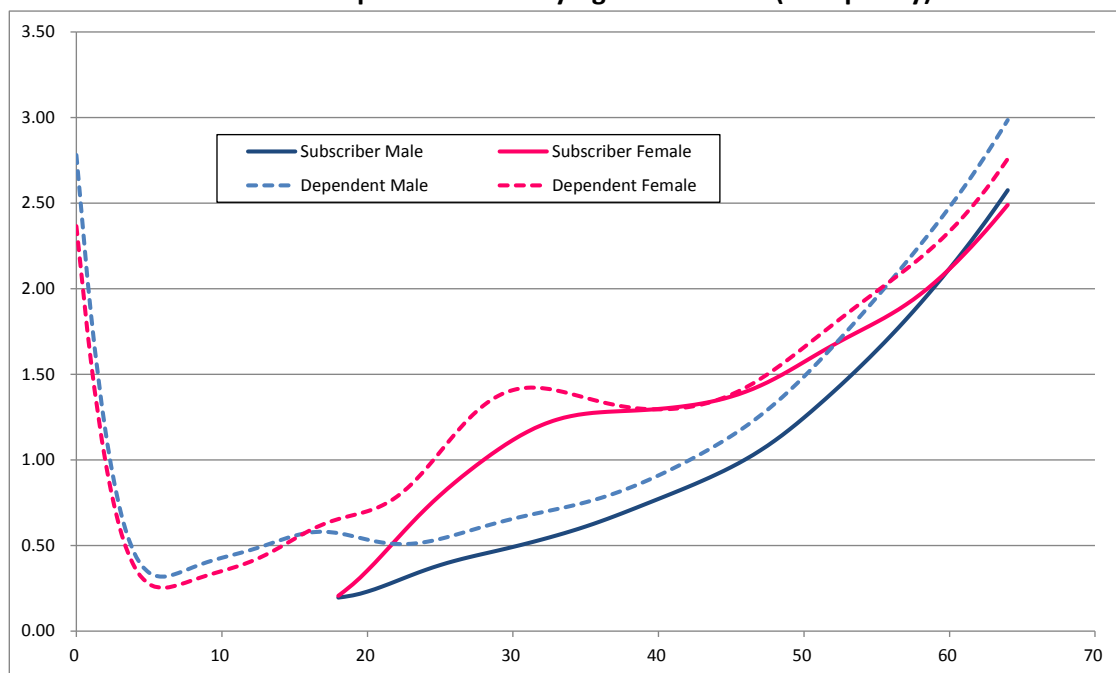
The relative costs by age are very similar between PPO/POS and HMO plan types with some variations that fit anecdotal commentary about why people select the two types of plans. Young families oftentimes elect HMO coverage for its more robust coverage of routine care and maternity benefits. The similarity of the age curve slopes indicates that there is little difference between plan types to flatten the costs by age. However, it should be kept in mind that the predominant type of HMO network is an independent physician arrangement (IPA) rather than a group or staff model for the insurers included in this analysis.

The comment made when comparing the individual to group age curves applies with this comparison. The index for each market type is relative to the average cost for that particular market and is not an indicator of relative cost differences between the HMO and PPO/POS markets.

Costs by Relationship

Costs by subscriber and dependent members yield interesting results. The following chart shows the results of the total commercial group coverage population between subscriber and dependent members. About one percent of the population was excluded because of the lack of relationship code.

Chart 4: Subscriber versus Dependent Costs by Age for 2009-10 (Group Only)



Of course, there are no costs for subscribers at the children's ages, but beyond age 20 for males and 50 for females there is a relatively uniform difference between subscriber and dependent costs. For dependents under age 18, there is a small difference in costs by gender. The male and female age curve for dependents dramatically diverge beginning at age 18. Dependent males above age 20 are about 20 percent higher than the same aged subscriber male. Females above age 50 are about 12 percent higher than their subscriber counterparts. During child-bearing ages, dependent females have accelerated costs at about five years before subscriber females. Dependent female costs show a peak in their index at age 30 and decline for a short period. Subscriber female costs do not show a similar peak in slope but rather have a steady increase. Female costs converge at about age 38 and begin diverging again at about age 45.

Unisex Cost Curve

The Affordable Care Act requires insurers to develop premium rates that vary by age only and not gender. In addition, they are limited to a maximum 3:1 ratio of the highest rate to the lowest rate. Recent regulations have proposed a uniform age curve that states may adopt. The following compares the 2010 relative cost curve of an average unisex set of per capita costs and the proposed age curve to the gender based cost curves. The underlying data is group PPO/POS coverages for 2010.

Chart 5: Unisex Cost Curve by Age for 2010

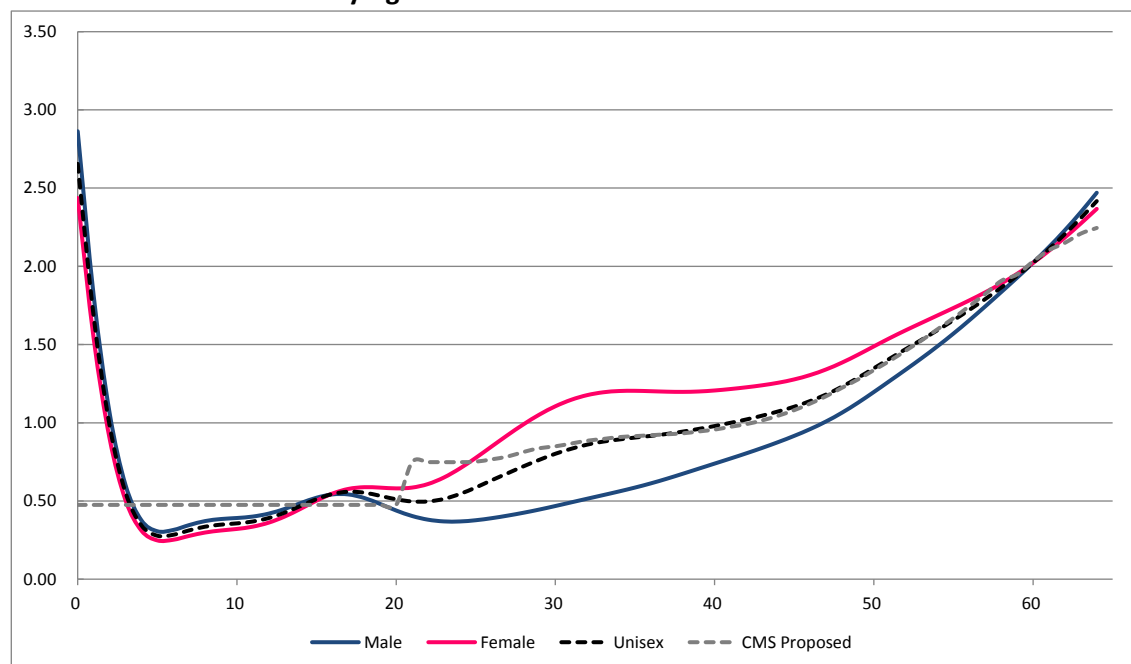


Chart 5 shows the unisex aging curve (the black dashed line) based on the membership underlying the 2010 experience data. Since the membership is close to 50/50 male/female, the resulting curve is very close to the average of the male and female curves.

The grey dashed line shows the proposed standard age curve from CMS to meet the ACA's 3:1 rate ratio limit in their proposed regulations issued November 26, 2012.² It was adjusted for the membership of the same 2010 experience data. The proposed age curve is flat under age 21 and, as stated in the proposed regulations, is not part of the 3:1 rate restriction. The proposed regulation interprets the 3:1 limitation to be a constraint on premium rates for adults and not children. The proposed flat index under age 21 is about 0.47 when setting the proposed age curve to the same indexing as the study uses (i.e., relative to the average cost). The data from the study averages to an index of 0.53 for those under age 21. This average is highly dependent on the enrollment distribution for the under age 21 population so the difference in the average is not surprising. The proposed age curve is higher from age 21 through age 35 than the calculated unisex age curve of the study's data. From ages 35 through 55, the proposed age curve is very close to the calculated unisex age curve and then begins to diverge (lower) after age 55. Assuming that all of the membership in the database continues to be insured, this implies that young adults (those age 21 through 35) will subsidize older adults (aged 60 and older) in the new health insurance programs. On average, the young adults (age 21 through 35) cost index is 15 percent higher³ under the CMS proposed age curve and the older adults (age 60-64) are 3 percent lower. At the extreme, the age 21 average person's cost index is 50 percent higher under the proposed age curve and the age 64 average person is 7 percent lower. From a gender perspective, males will subsidize females

² Patient Protection and Affordable Care Act; Health Insurance Market Rules; Rate Review, Centers for Medicare & Medicaid Services, HHS, Proposed Rule, Federal Register, Vol. 77, No. 227, November 26, 2012, page 70595.

³ For those age 21 through 29, the proposed age curve is 27 percent higher than the study's unisex age curve.

for most years until age 60 where the proposed unisex index is less than both the male and female indices.

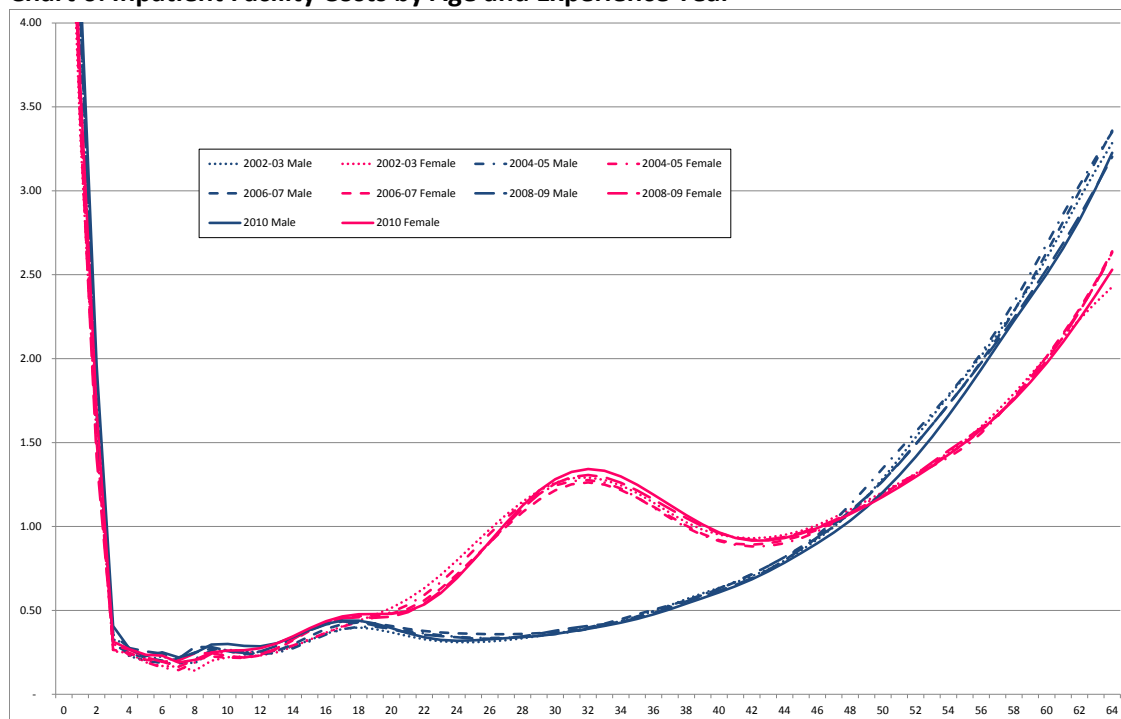
Pre-Medicare Costs by Service

Per capita costs were summarized by single age and gender for each year by major service categories (inpatient facility, outpatient facility, professional services and prescription drugs). The following charts show the results for all experience years by each major service for the group PPO line of business. All other lines of business show similar results but the group PPO line has greater exposure and therefore more credible data broken down by service. Each chart uses the same scale. Detailed results are shown in tables in the appendix.

Inpatient Facility Costs

The inpatient facility costs by age showed the greatest variation by age. The index by gender is very consistent from year to year. The index at the very earliest ages has values exceeding 10.0. The graduation method does not do a very good job in smoothing data that have extreme changes, so raw data results are shown for ages 3 through 7. Other than the child-bearing ages for females, the inpatient facility curve is nearly unchanged over the last ten years.

Chart 6: Inpatient Facility Costs by Age and Experience Year



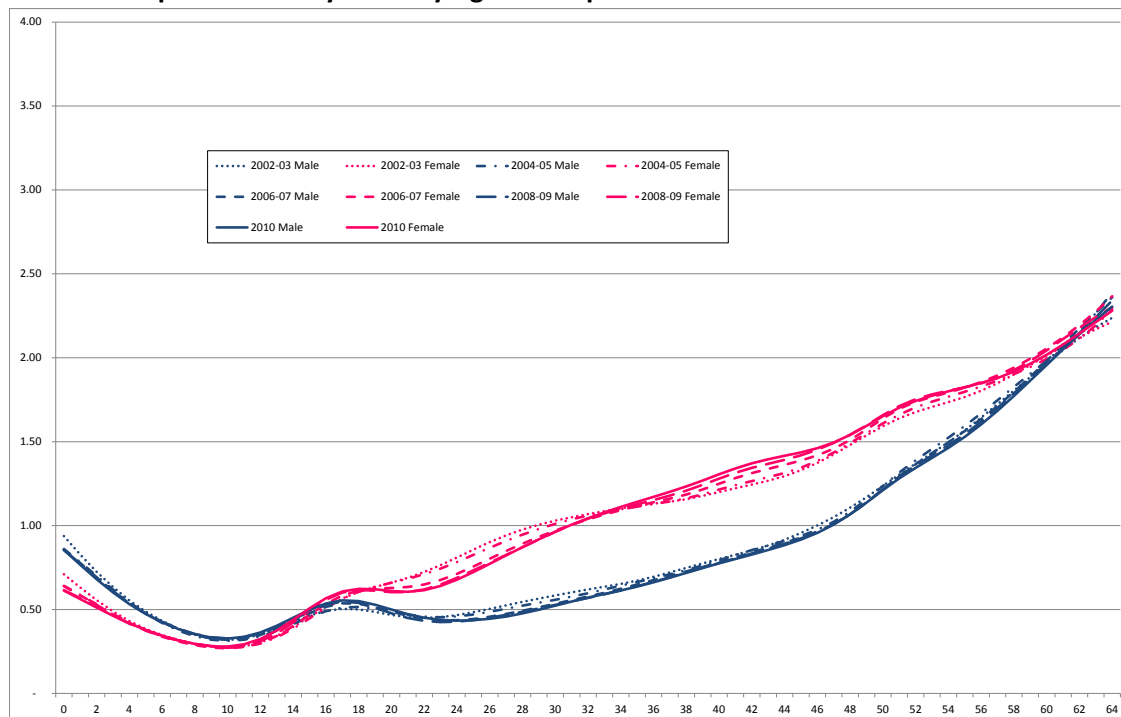
Inpatient costs show a very significant cost increase for females during the child-bearing ages reflecting the costs of delivery with a distinctive peak in the early 30s. Inpatient services exceed the 2.00 cost index (i.e., over two times the average cost of the whole group) at the oldest ages for both male and female and this variance has been consistent over time. Inpatient costs show the greatest difference of

male over female costs after age 50 than any of the other service groups. Also, the cross-over age where male costs exceed female costs is around age 50 instead of age 60 for all services combined.

Outpatient Facility Costs

After the slight decline and rise during the adolescent ages, the outpatient facility costs by age exhibit a consistently increasing age curve. The bump seen in the overall costs during child-bearing ages is not as evident with these costs. Female costs by ages show greater variation over the years than the male costs. In particular, their costs have lowered relative to the average over the years for females in their 20s and have increased for females in their 40s and 50s.

Chart 7: Outpatient Facility Costs by Age and Experience Year

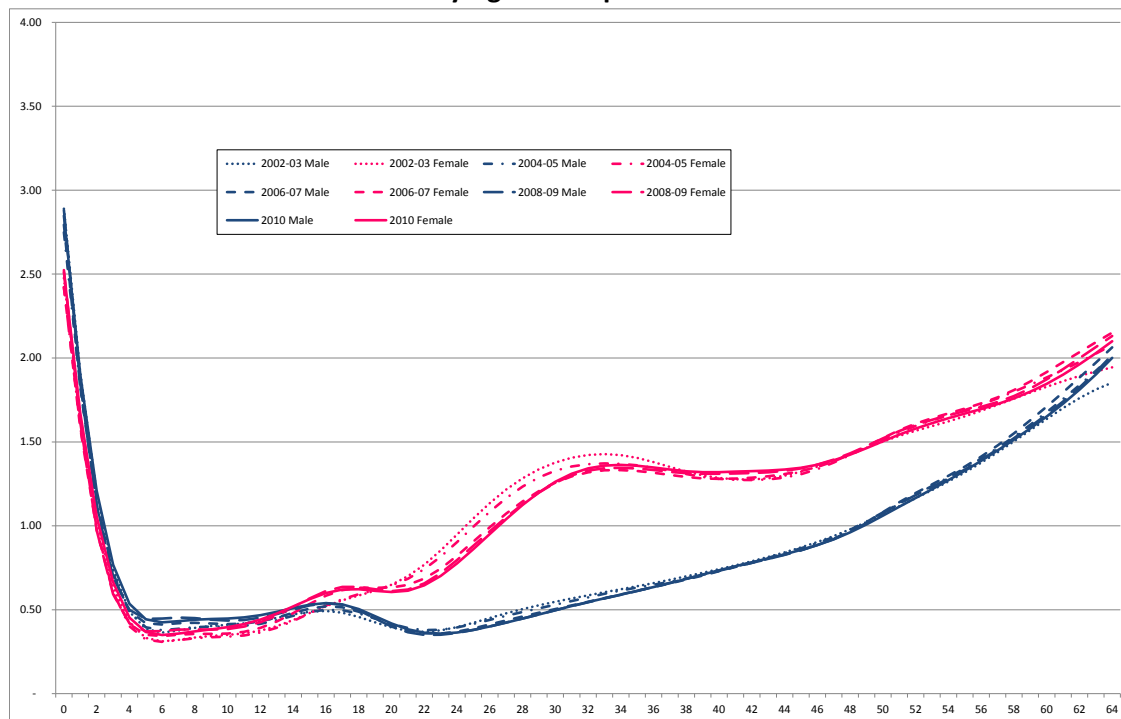


Female costs show a relatively steady increase in costs during adulthood while male cost increases are more exponential. Costs at the youngest ages are relatively modest with costs below the overall average (i.e., index less than 1.00) for all ages.

Professional Service Costs

Professional service costs show very high costs at the earliest ages that declines sharply and then level off from ages 5 through about 22 and then begin increasing throughout adulthood. A very rapid increase in costs is evident for females during child-bearing ages. In addition, the apparent shift over the years for females in those years reflects the observed delay of child birth discussed earlier in this report.

Chart 8: Professional Service Costs by Age and Experience Years



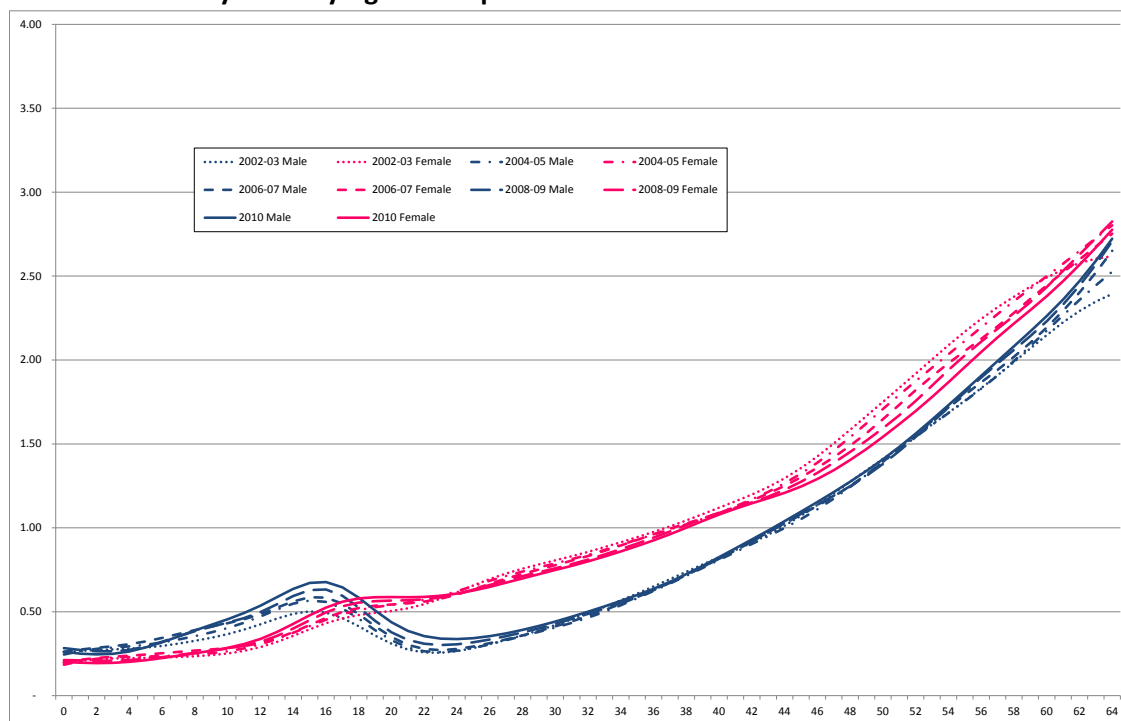
Professional service costs show a very similar curve as the overall cost curve although the male costs do not exceed female costs at any adult age.

The female age curve has flattened out over the years with relative costs throughout the childbearing ages lower in the more recent years and also at the older ages. The male age curve has remained relatively stable over the years with slightly lower relative costs in the late 20s and early 30s.

Pharmacy Costs

Pharmacy costs increase during early childhood and crest in the late teens. Male costs then drop until the mid-20s and begin a geometric increase after, while females do not experience a similar drop. The aging curves for males do not seem to differ over the years while females appear to trend downward over the nine year period. Both the male and female age curves have increased relative to the average in the teen years and early 20s.

Chart 9: Pharmacy Costs by Age and Experience Years



Overall Medicare Costs

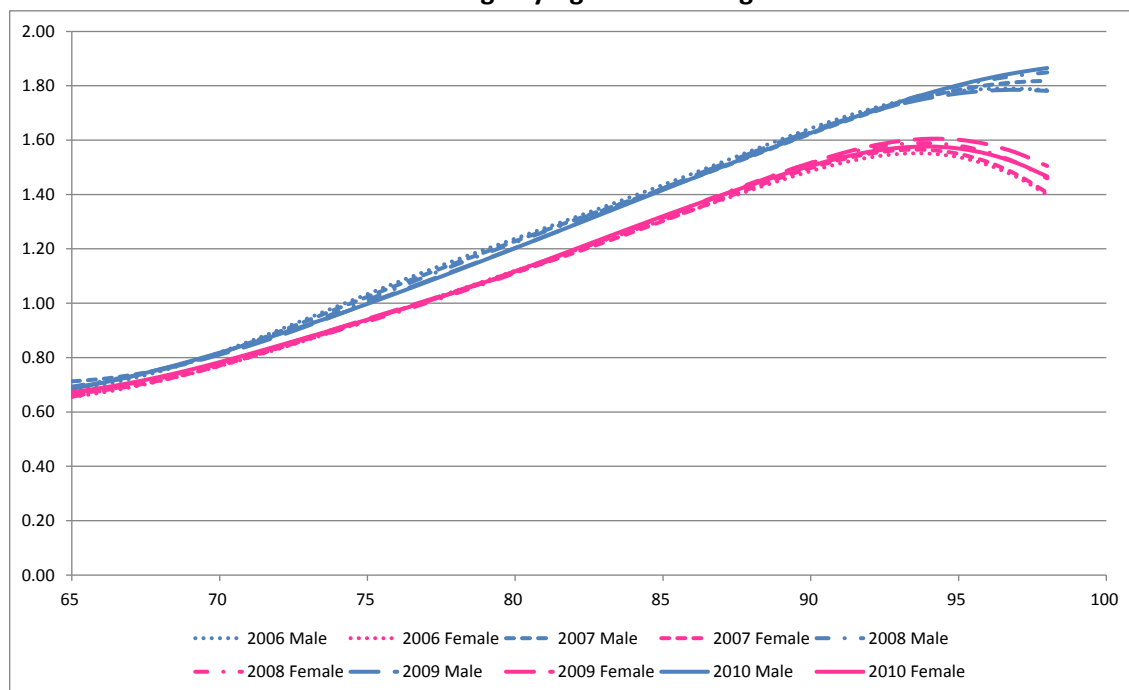
The Medicare 5% samples only include data for fee-for-service Medicare beneficiaries and have both allowed charges (the amount on which Medicare benefits are based) and the amount of the Medicare benefit payment. The following analysis reviews cost relativities of both the Medicare total allowed charge and the Medicare net allowed amount. The Medicare net allowed amount is determined as the difference of the Medicare total allowed amount and the Medicare benefit payment. This is, in essence, the amount of costs that may be considered allowable charges for any private supplemental plan (e.g., employer-sponsored integrated plan, individual Medicare supplement or Medigap plan). A third Medicare cost that could be analyzed by age and gender is the Medicare benefit payment amount itself. Such an age curve could be used by someone projecting the cost of Medicare benefit payments. In general, the shape of a Medicare benefit payment age curve will be very similar to the allowed charge so this particular measure is not shown in this study except for a very high level comparison in Chart 20.

Data is available for calendar years 2006 through 2010. Unless specified, the Medicare charts do not include prescription drugs, as the Part D (the Medicare outpatient prescription drug program) data is not included.

Costs by Year

The following charts show cost indices by year for the Medicare population.

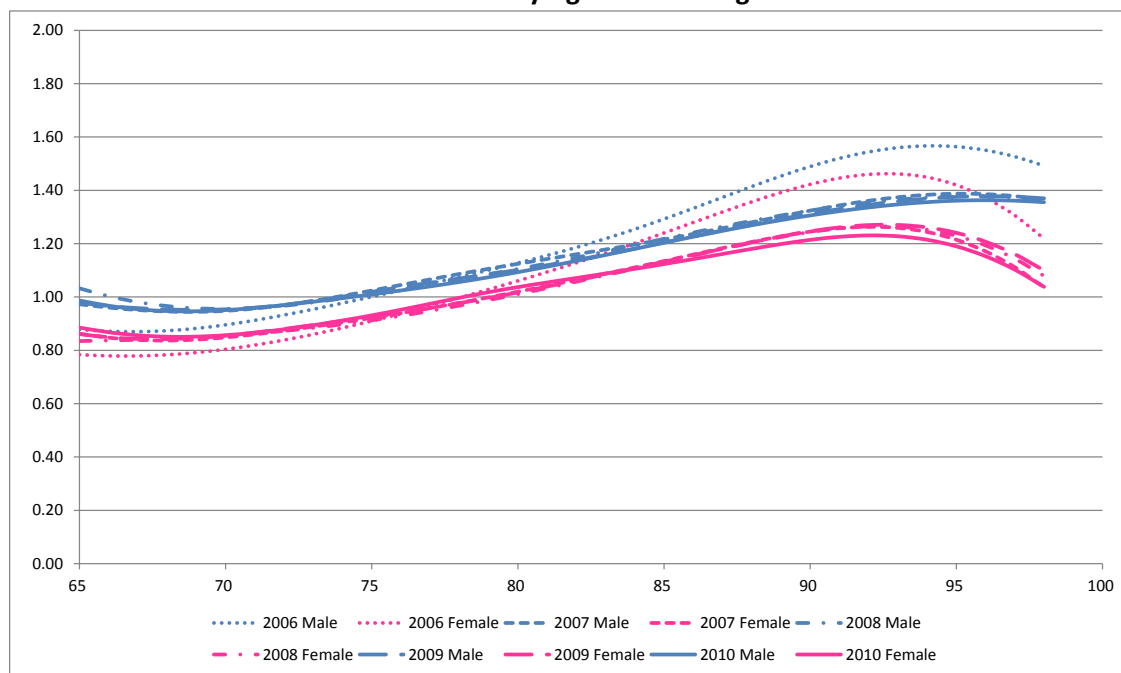
Chart 10: Medicare Total Allowed Charge by Age 2006 through 2010



The costs for all years were indexed to the weighted average cost of the population for each year. The 2010 demographics were used for each year for the weighting to eliminate the noise that could be introduced with changing demographics. The costs only include Medicare Parts A and B fee-for-service costs and do not include outpatient prescription drugs.

Two key findings can be derived from the above chart by comparing the 2006 lines to the 2010 lines. One, relative per capita costs steepened for both males and females during the five years of data reviewed. Two, the costs do not level off until the mid-90s for both males and females.

Chart 11: Medicare Net Allowed Amount by Age 2006 through 2010



The relative cost curve is flatter for the above Medicare net allowed amounts than the underlying Medicare total allowed charges. The key difference would be the Medicare benefit design that results in a lower proportion of inpatient costs in the net allowed amount than in the Medicare total allowed charge. Inpatient costs for the Medicare net allowed amounts primarily include the Part A inpatient deductible with the coinsurance payments for long term hospital stays to a lesser degree. The difference in the shape of the curve from the Medicare net allowed amount chart implies that inpatient cost by age is the key driver of the Medicare total allowed charge curve trend over time. During the five year period, it visibly appears that the cost curve has flattened. The 2006 age curve seems to be an anomaly relative to the other four years and suggests that it should be ignored.⁴

Medicare Costs by Service

Similar to the pre-Medicare analysis by service, per capita costs were summarized by single age and gender for each year by major service categories (inpatient facility, outpatient facility, professional and prescription drugs) for Medicare members. The following charts show the results for all experience years by each major service, first for Medicare Total Allowed Charge, then for Medicare Net Allowed Amount. All charts are shown with a scale from 0.00 to 2.00 except for inpatient facility costs that use an expanded scale to 3.00. Detailed results are shown in tables in the appendix.

Inpatient Facility Costs

The inpatient facility costs by age showed the greatest variation of the four service categories. The indexes at the oldest ages have values exceeding 2.0. In addition, other than the older ages, the inpatient facility curve is nearly unchanged over the last ten years.

⁴ This anomaly was shown to CMS Office of the Actuary and they were not aware of any design difference between 2006 and the other years that would yield such a difference.

Chart 12: Inpatient Facility Costs by Age and Experience Year—Medicare Total Allowed Charge

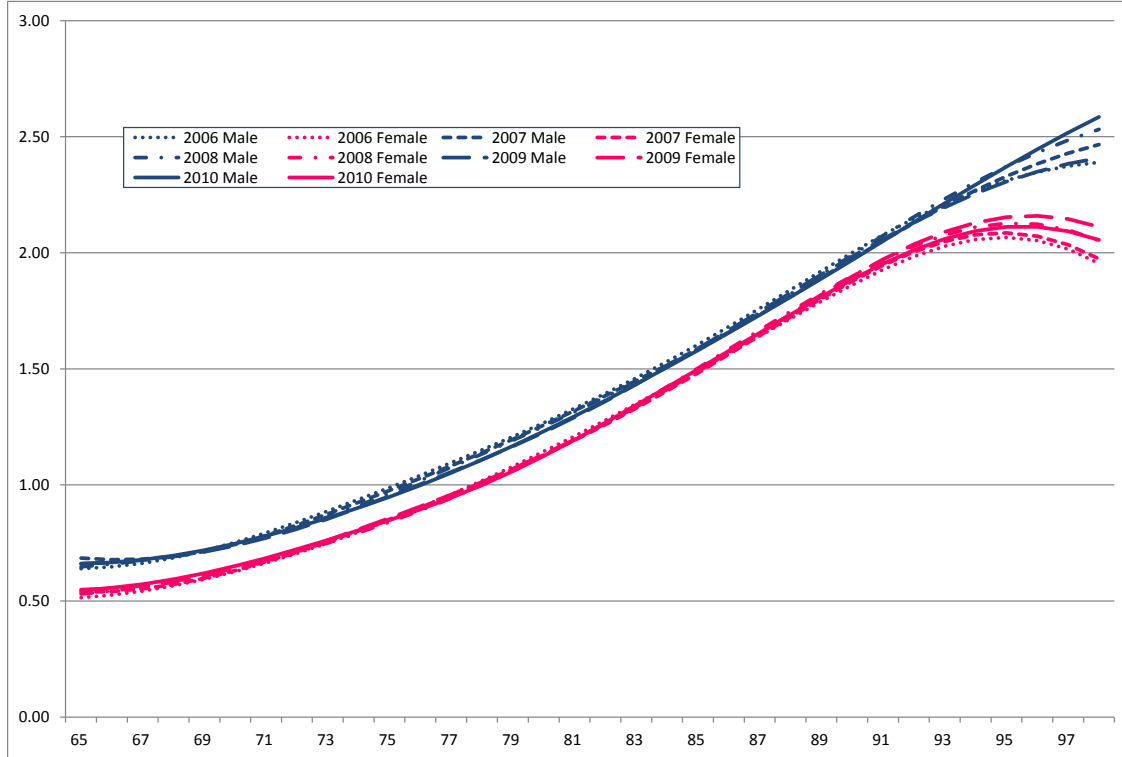
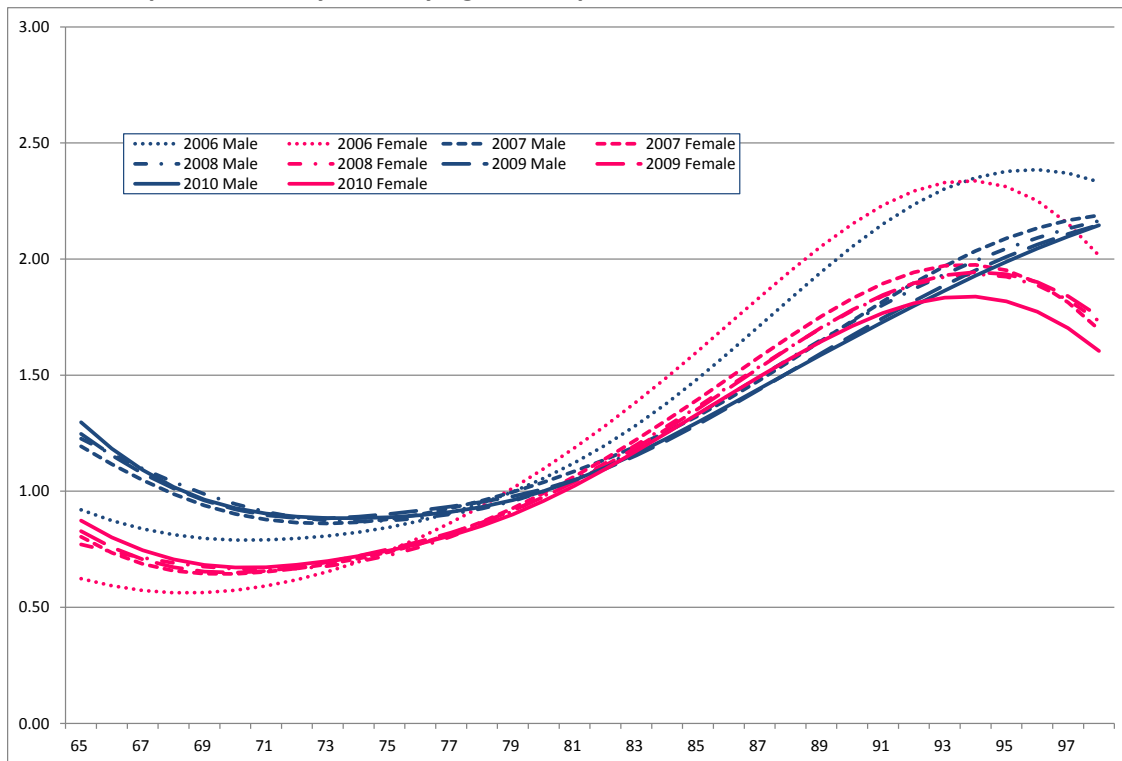


Chart 13: Inpatient Facility Costs by Age and Experience Year—Medicare Net Allowed Amount



The age curve for Medicare allowed charges is very similar for all study years but departs at the older ages. The male age curve for 2010 shows an increasing cost trend relative to the average over the other experience years but there is not a consistent change by year. The 2009 age curve is very similar to the 2006 age curve but the 2007 and 2008 age curves are between the 2006 and 2010 age curves. The female age curve at these older ages show more sporadic variation with the 2009 age curve having the highest index values and the 2010 age curve in the middle of the high 2009 age curve and the low 2006 age curve.

The curve for the Medicare net allowed amounts produces an interesting pattern relative to the Medicare total allowed charge cost curve. First the 2006 curve seems to be much different than the other years and should probably be disregarded in any trend observations. However, it is consistent with the following years in that the Medicare net allowed amount cost curve is flattening out between 2007 and 2010.

The Medicare net allowed amount age curve also declines in the early years of Medicare coverage before increasing again in the mid-70s and finally declining again in the mid-90s. The declining curve in the 60s and the 90s are probably for different reasons. In the 60s, it is likely that the length of stay is less than later ages so that the Part A inpatient deductible is a greater percentage of the Medicare total allowed charge. This also implies that the hospital admission rate declines in the 60s which may be true as the healthier beneficiaries who were working start to enroll in Medicare. The decline in the 90s seems to correlate with the decline in overall Medicare total allowed charges.

Outpatient Facility Costs

The outpatient facility costs by age exhibit a consistently increasing age curve until the mid-90s. Costs by ages show greater variation in the later ages and indicate higher cost levels over time. The relative female costs also decline at a greater rate in the 90s than the relative male costs.

Chart 14: Outpatient Facility Costs by Age and Experience Year—Medicare Total Allowed Charge

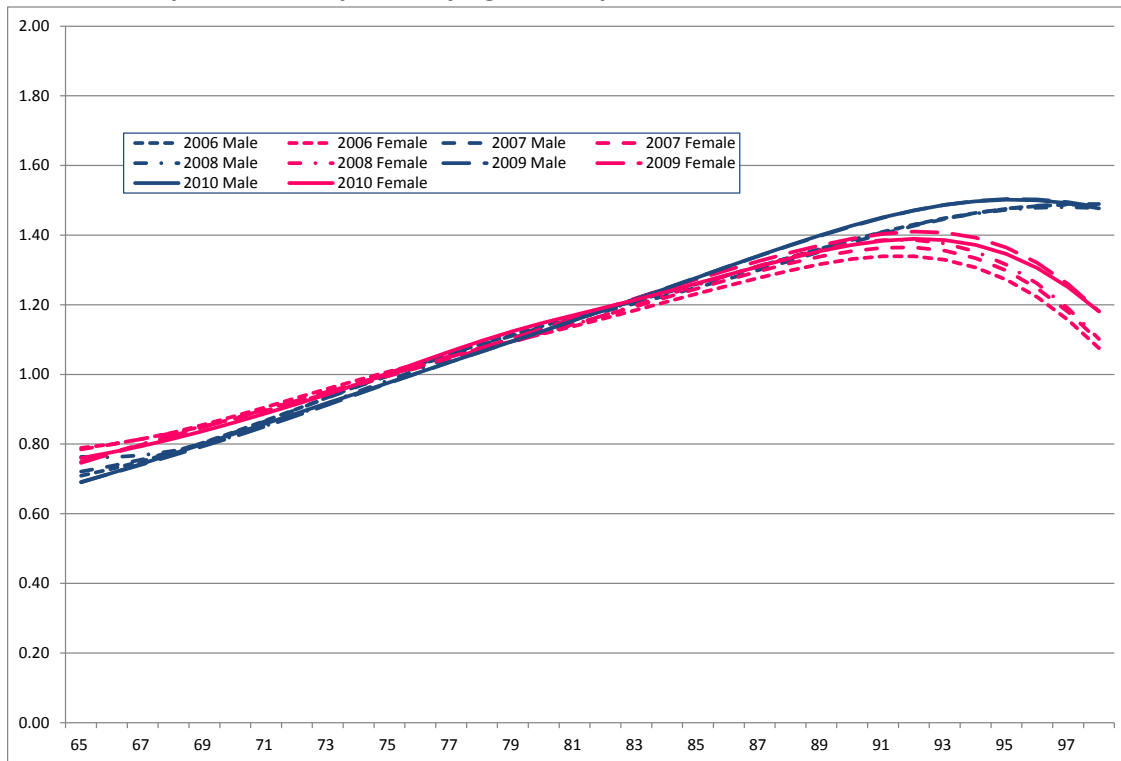
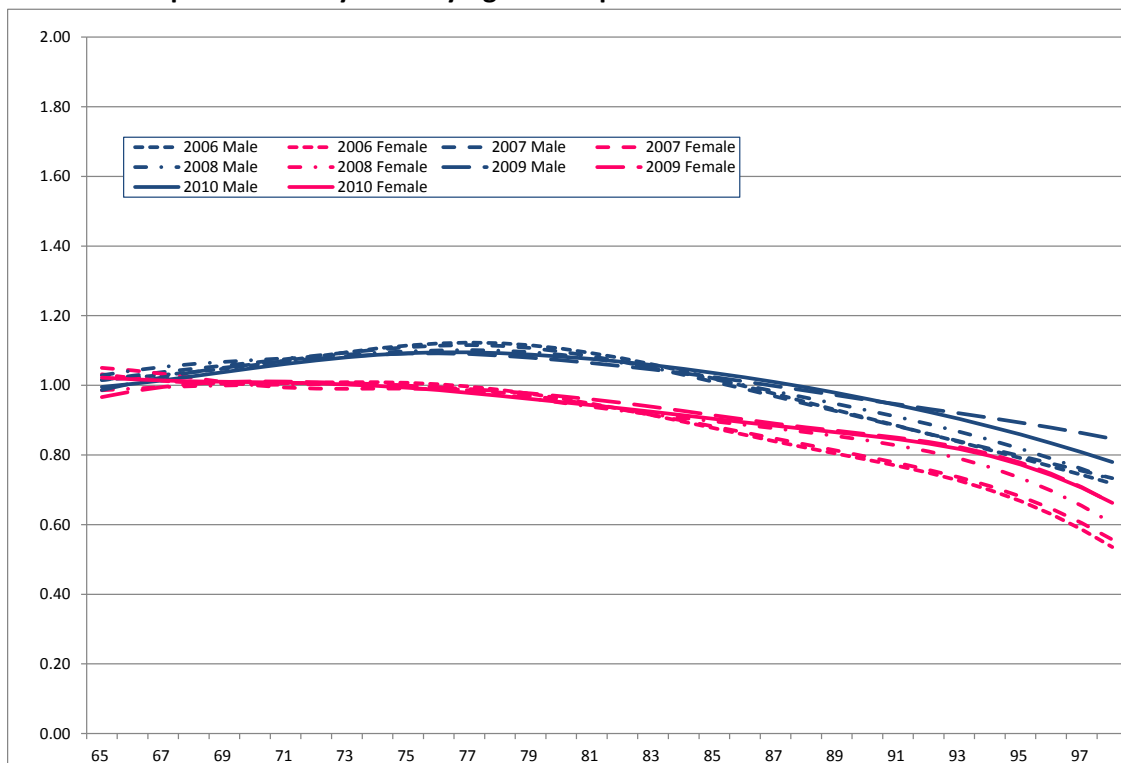


Chart 15: Outpatient Facility Costs by Age and Experience Year—Medicare Net Allowed Amount



Medicare net allowed amounts reflect a relatively flatter aging curve than the Medicare total allowed charges. In fact, after peaking in the late 70s, the relative costs begin to decline. There appears to be an increasing relative cost trend at the older ages over the years. Both the 2009 and 2010 age curves for both males and females are higher than the 2006 through 2008 age curves which are relatively close together.

Professional Service Costs

Professional service costs show increasing costs until the mid-80s and then decline. The variation of the curve over time is not as great as the inpatient and outpatient facility cost curves. However, it does show an increasing cost relative to the average cost at the older ages over time. Both the male and female age curves peak in the mid-80s and declines steadily at the older ages.

Chart 16: Professional Service Costs by Age and Experience Years—Medicare Total Allowed Charge

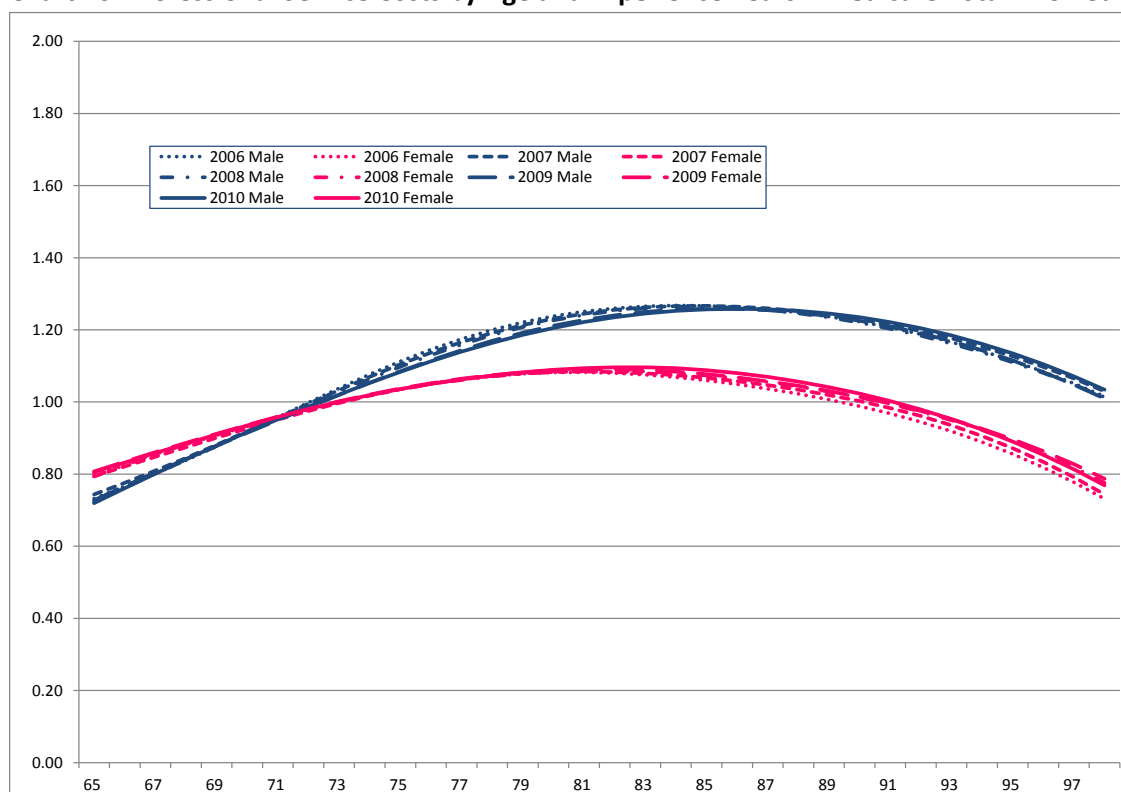
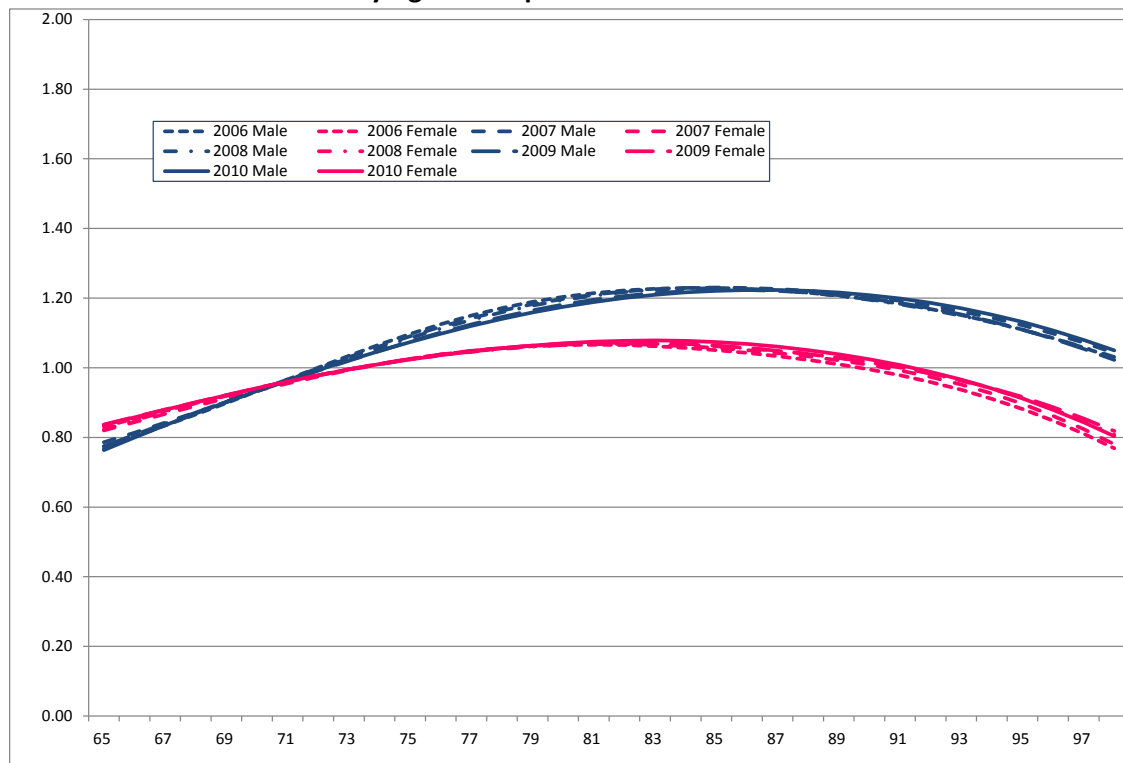


Chart 17: Professional Costs by Age and Experience Years—Medicare Net Allowed Amount

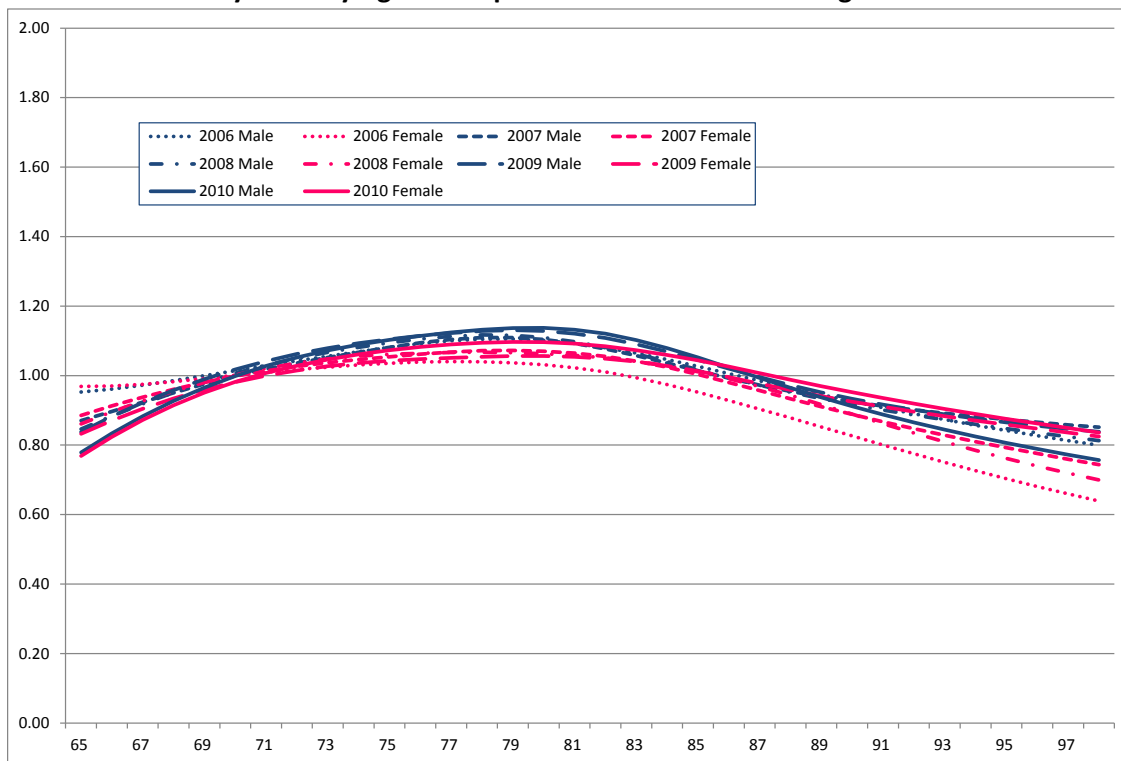


Professional service net allowed amounts show a similar curve as the total allowed charge cost curve because of the design of the Part B program (i.e., relatively low deductible and 80 percent benefit with no out-of-pocket limit).

Pharmacy Costs

Medicare Part D pharmacy costs were not available from the 5% Medicare sample but there was data available for the commercial business. This data shows an increasing cost curve until about age 80 and then declines. Similar to the other Medicare data, costs show increasing relative costs over the last five years.

Chart 18: Pharmacy Costs by Age and Experience Years—Medicare Ages

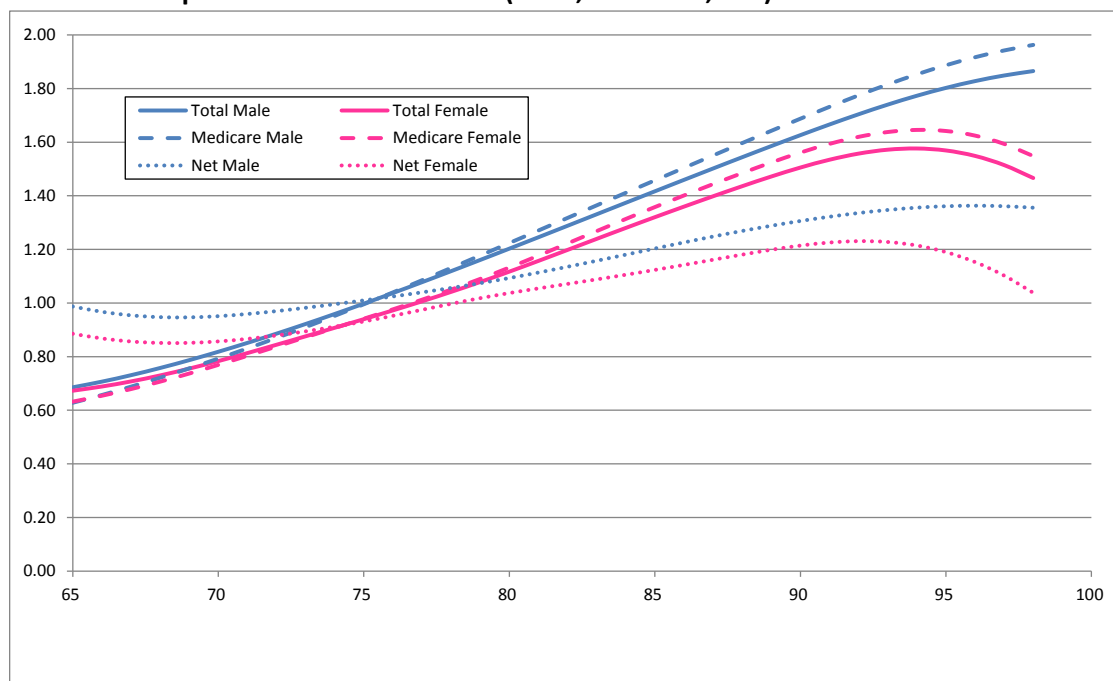


There are not as marked differences in the age curve by gender as the other services. The indices are very close by gender in the 60s and begin to diverge in the 70s for all study years. There is a trend in the female index showing higher relative costs over the years at ages above 80 while the male costs seem to show declining relative costs with the 2010 index lower than the other years.

Medicare Benefit Payments

A natural conclusion in studying the age curves for the total allowed Medicare charges and the net allowed amounts would imply that the Medicare benefit payment would be the steepest slope. The following chart compares the three for the 2010 study period (all costs exclude prescription drugs).

Chart 19: Comparison of Medicare Costs (Total, Medicare, Net)



The “Total” lines are the Medicare total allowed charges. The “Medicare” lines are the Medicare benefit payment amounts and the “Net” lines are the Medicare net allowed amounts.

One interesting use of the above curve is to estimate the per person cost increase of the Medicare program if the eligibility age were increased to age 70. Using the 2010 enrollment, about 28 percent of the population will be dropped but only 19 percent of the claims will be eliminated. This will mean that the per person cost will increase by 12.5 percent by dropping the younger retirees from the Medicare program $[(1.00 - 0.19) \div (1.00 - 0.28) - 1.00]$. But, it does save the Medicare program 19 percent.

Another use of the age curve is to estimate a person’s total out-of-pocket costs in retirement. Social Security estimates of life expectancy at age 65 are about 19 and 21 years for males and females, respectively.⁵ Of course, this is an average and retirees may live longer or shorter lifespans than the averages suggest. The following illustrates average costs for persons retiring at 55, 60, 65 and 70 in 2013 and living to 75, 80, 85, 90 and 95. It assumes that the average per person costs published by the Health Care Cost Institute represent total costs under age 65.⁶ Of course, it only represents the cost of claims and does not include any administrative costs of insurance companies to provide the benefits. For post-65 costs, it assumes the average net allowed cost from the 5% Medicare sample. These are costs not paid by Medicare and therefore a cost that retirees will pay for either by purchasing insurance or out of

⁵The 2012 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds. *Table V.A.4. Cohort Life Expectancy*. Washington: U.S. Government Printing Office, 25 April 2012.

⁶Health Care Cost Institute. *Health Care Cost and Utilization Report: 2011*. Washington: Health Care Cost Institute, September 2012.

their pockets. In addition, retirees will be required to pay the Medicare Part B and D premiums which vary by income but most retirees will pay the standard premium rates which are used in this exhibit.⁷

Table 2: Health Care Costs in Retirement for Single Retiree in 2013

| Retirement Age | Life Expectancy | | | | |
|-------------------|-----------------|------------|------------|------------|------------|
| | 75 | 80 | 85 | 90 | 95 |
| 55 | \$ 206,200 | \$ 276,300 | \$ 372,400 | \$ 501,500 | \$ 672,500 |
| 60 | 123,400 | 176,500 | 249,300 | 347,200 | 476,800 |
| 65 | 50,900 | 91,200 | 146,400 | 220,600 | 318,800 |
| 70 | 23,000 | 53,700 | 95,500 | 151,800 | 226,200 |

The above amounts are for a single retiree in 2013. For a family of two, the amounts should be doubled. They represent the present value of future expected health care costs that are not paid by Medicare. If the above numbers were discounted to a present value number, they will be less. For example, the \$146,400 amount for an age 65 retiree living until age 85 would be \$104,100 discounted at 3 percent per year.

Fidelity Investments has been estimating a similar cost of medical expenses in retirement for the last few years. Their latest estimate from 2012 was that a 65-year old couple would need \$240,000 to cover medical expenses thought retirement. That number is comparable to the 65 year old living to 85 shown above which would be about \$293,000 (\$146,400 × 2).⁸

The Medicare payment costs can be used to illustrate the cost of providing Medicare benefits by the government. Since the Medicare Parts A, B and C are financed in different ways, it is not easy to add up their costs in a comparable fashion from the annual Trustees report. Starting with the 5% Medicare sample in 2010, we can calculate the estimated costs per person in 2013 using the assumed trend rates shown in the Methodology section. The resulting projected costs are shown below:

Table 3: Projected Medicare Costs for Single Retiree in 2013

| Retirement Age | Life Expectancy | | | | |
|-------------------|-----------------|------------|------------|------------|--------------|
| | 75 | 80 | 85 | 90 | 95 |
| 65 | \$ 130,100 | \$ 250,700 | \$ 433,900 | \$ 705,400 | \$ 1,092,900 |
| 70 | 61,900 | 153,800 | 292,700 | 498,500 | 792,200 |
| 75 | -- | 72,600 | 178,600 | 334,500 | 557,100 |
| 80 | -- | -- | 83,700 | 202,600 | 371,300 |

Assuming an average life expectancy to age 85 for a new Medicare beneficiary at age 65, the federal government will spend, on average, \$433,900 for their Medicare coverage. The chart also shows the sensitivity of the government obligation to differences in life expectancy. If the new Medicare

⁷ See the Methodology section for details on the health care trend rate and other assumptions used in the projections.

⁸ In Fidelity Investment's press release, they assume that males have a life expectancy of 17 years and 20 years for females. Fidelity. *Fidelity Estimates Couples Retiring In 2012 Will Need \$240,000 To Pay Medical Expenses Throughout Retirement*. Boston: Fidelity, 12 May 2012.

beneficiaries were to live for 25 years instead of 20 years on average, the obligation increases by 63 percent to \$705,400.

Combined Net Medicare Costs

Using the net cost curves above can be used to derive plan specific age curves. For example, if we assume the 2010 study year is an appropriate aging curve for the Medicare population and the plan's costs are allocated by the following:⁹

- Inpatient 20%
- Outpatient 10%
- Professional 10%
- Pharmacy 60%

Then the following age curve assumption may be derived.

Table 4: Development of Plan Specific Medicare Age Curve

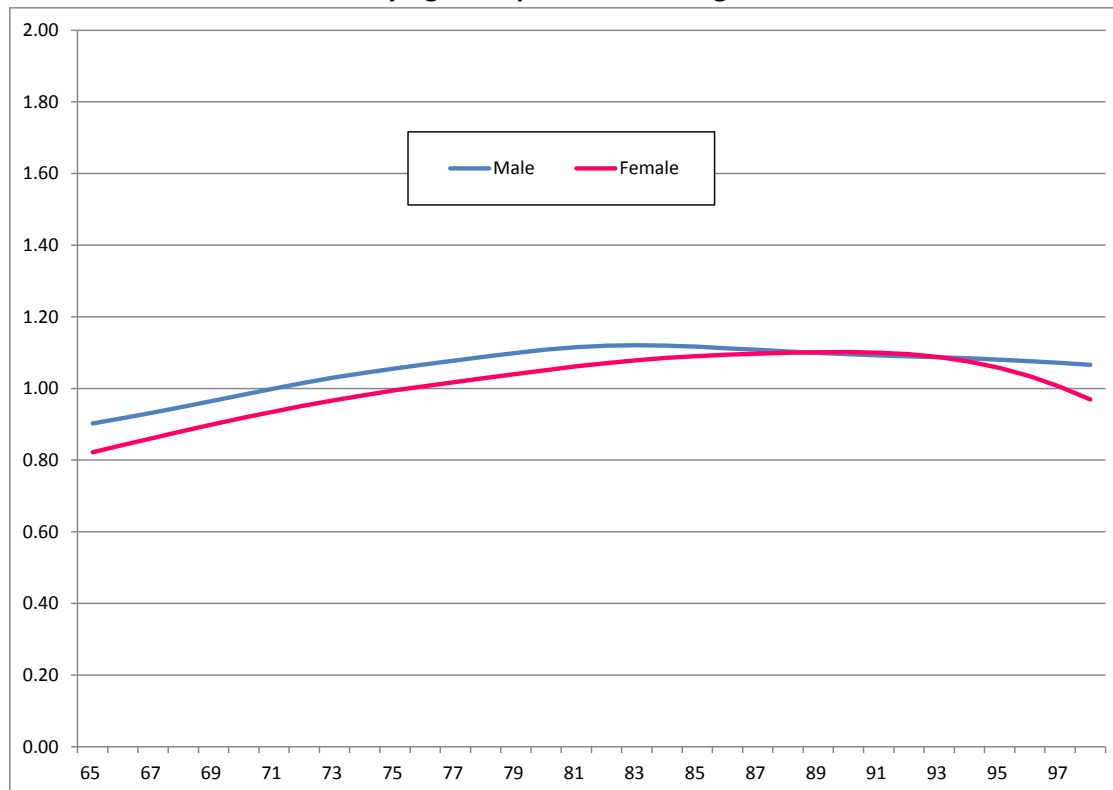
| Age | 20.00% Inpatient | | 10.00% Outpatient | | 10.00% Professional | | 60.00% Pharmacy | | 100.00% Total | |
|-----|---------------------|--------|----------------------|--------|------------------------|--------|--------------------|--------|------------------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 1.296 | 0.873 | 0.996 | 1.022 | 0.763 | 0.836 | 0.778 | 0.769 | 0.902 | 0.822 |
| 66 | 1.184 | 0.801 | 1.004 | 1.018 | 0.800 | 0.858 | 0.834 | 0.824 | 0.917 | 0.842 |
| 67 | 1.091 | 0.745 | 1.015 | 1.014 | 0.835 | 0.880 | 0.883 | 0.872 | 0.933 | 0.862 |
| 68 | 1.018 | 0.706 | 1.026 | 1.011 | 0.869 | 0.901 | 0.927 | 0.915 | 0.949 | 0.881 |
| 69 | 0.964 | 0.682 | 1.038 | 1.010 | 0.902 | 0.922 | 0.965 | 0.951 | 0.966 | 0.900 |
| 70 | 0.927 | 0.672 | 1.050 | 1.009 | 0.934 | 0.942 | 0.999 | 0.982 | 0.983 | 0.918 |
| 71 | 0.904 | 0.673 | 1.062 | 1.008 | 0.964 | 0.961 | 1.028 | 1.007 | 1.000 | 0.936 |
| 72 | 0.890 | 0.683 | 1.072 | 1.006 | 0.993 | 0.979 | 1.052 | 1.029 | 1.016 | 0.952 |
| 73 | 0.884 | 0.699 | 1.080 | 1.003 | 1.022 | 0.995 | 1.072 | 1.046 | 1.030 | 0.968 |
| 74 | 0.884 | 0.720 | 1.088 | 0.998 | 1.048 | 1.010 | 1.089 | 1.061 | 1.044 | 0.982 |
| 75 | 0.888 | 0.745 | 1.092 | 0.993 | 1.074 | 1.024 | 1.103 | 1.073 | 1.056 | 0.995 |
| 76 | 0.896 | 0.774 | 1.095 | 0.986 | 1.098 | 1.036 | 1.114 | 1.083 | 1.067 | 1.007 |
| 77 | 0.911 | 0.809 | 1.095 | 0.978 | 1.120 | 1.047 | 1.124 | 1.089 | 1.078 | 1.018 |
| 78 | 0.932 | 0.851 | 1.092 | 0.970 | 1.141 | 1.056 | 1.132 | 1.094 | 1.089 | 1.029 |
| 79 | 0.962 | 0.900 | 1.088 | 0.961 | 1.159 | 1.064 | 1.137 | 1.097 | 1.099 | 1.040 |
| 80 | 1.001 | 0.958 | 1.082 | 0.952 | 1.175 | 1.070 | 1.137 | 1.096 | 1.108 | 1.051 |
| 81 | 1.047 | 1.023 | 1.076 | 0.943 | 1.189 | 1.075 | 1.132 | 1.092 | 1.115 | 1.062 |
| 82 | 1.102 | 1.096 | 1.068 | 0.933 | 1.200 | 1.078 | 1.120 | 1.084 | 1.119 | 1.071 |
| 83 | 1.162 | 1.173 | 1.058 | 0.924 | 1.210 | 1.079 | 1.102 | 1.073 | 1.121 | 1.079 |
| 84 | 1.228 | 1.253 | 1.047 | 0.914 | 1.216 | 1.077 | 1.079 | 1.060 | 1.119 | 1.085 |
| 85 | 1.297 | 1.333 | 1.035 | 0.903 | 1.221 | 1.074 | 1.052 | 1.044 | 1.116 | 1.091 |

⁹ The 20%/10%/10%/60% allocation above is appropriate for a typical large employer-sponsored plan using Medicare carve-out coordination. If the plan design or Medicare coordination method is different, another allocation may need to be used. For a Medicare Advantage product where the plan is responsible for all of the Medicare allowed charges, a similar calculation should be done on the Medicare total allowed charge age/gender curve.

| | 20.00% | | 10.00% | | 10.00% | | 60.00% | | 100.00% | |
|-----|-----------|--------|------------|--------|--------------|--------|----------|--------|---------|--------|
| | Inpatient | | Outpatient | | Professional | | Pharmacy | | Total | |
| Age | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 86 | 1.369 | 1.414 | 1.023 | 0.893 | 1.223 | 1.068 | 1.023 | 1.026 | 1.112 | 1.095 |
| 87 | 1.442 | 1.494 | 1.009 | 0.884 | 1.223 | 1.060 | 0.993 | 1.007 | 1.108 | 1.097 |
| 88 | 1.515 | 1.572 | 0.994 | 0.874 | 1.221 | 1.051 | 0.965 | 0.988 | 1.103 | 1.100 |
| 89 | 1.588 | 1.645 | 0.978 | 0.865 | 1.216 | 1.039 | 0.937 | 0.970 | 1.099 | 1.101 |
| 90 | 1.659 | 1.712 | 0.961 | 0.856 | 1.209 | 1.024 | 0.912 | 0.952 | 1.096 | 1.102 |
| 91 | 1.729 | 1.768 | 0.943 | 0.845 | 1.199 | 1.008 | 0.888 | 0.935 | 1.093 | 1.100 |
| 92 | 1.798 | 1.810 | 0.924 | 0.833 | 1.186 | 0.988 | 0.865 | 0.919 | 1.090 | 1.096 |
| 93 | 1.864 | 1.834 | 0.903 | 0.817 | 1.171 | 0.966 | 0.845 | 0.904 | 1.087 | 1.088 |
| 94 | 1.928 | 1.838 | 0.882 | 0.797 | 1.152 | 0.941 | 0.825 | 0.889 | 1.084 | 1.075 |
| 95 | 1.989 | 1.818 | 0.859 | 0.773 | 1.131 | 0.912 | 0.806 | 0.875 | 1.080 | 1.057 |
| 96 | 2.045 | 1.773 | 0.834 | 0.742 | 1.107 | 0.879 | 0.789 | 0.862 | 1.076 | 1.034 |
| 97 | 2.098 | 1.702 | 0.808 | 0.706 | 1.080 | 0.843 | 0.772 | 0.849 | 1.072 | 1.005 |
| 98 | 2.146 | 1.604 | 0.780 | 0.663 | 1.050 | 0.803 | 0.757 | 0.836 | 1.066 | 0.969 |

Graphically, the resulting age curve is shown in Chart 21.

Chart 20: Net Medicare Costs by Age for Specific Plan Design

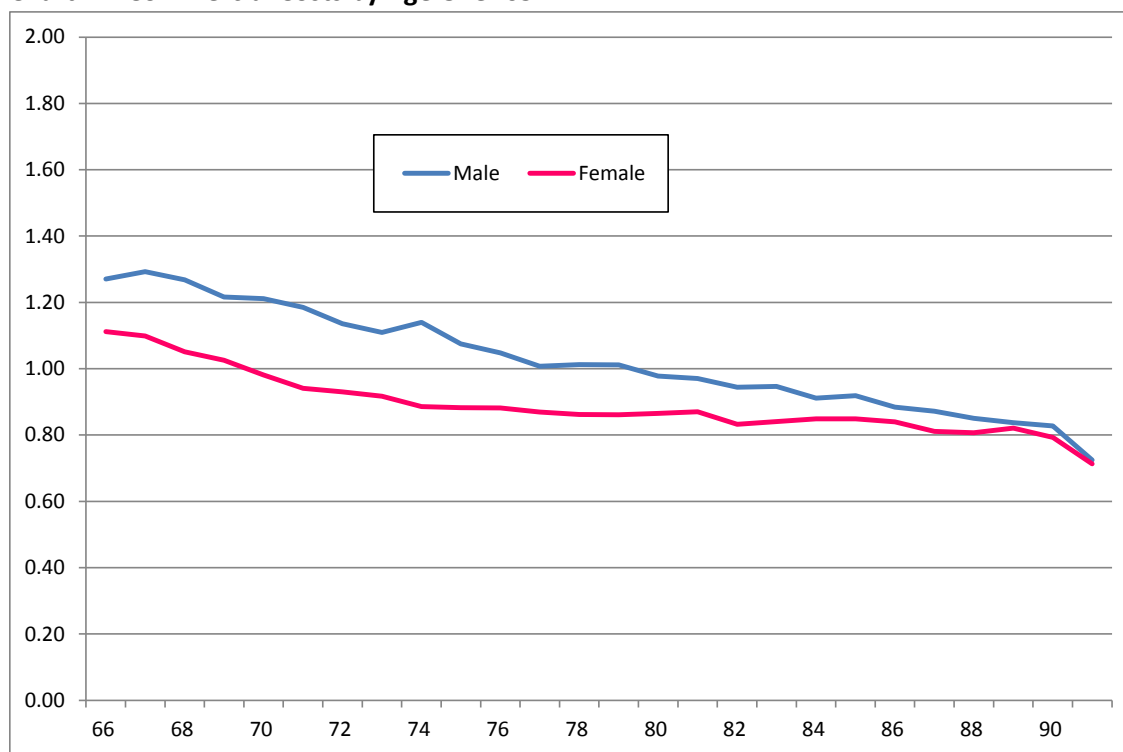


The resulting curve is a relatively flat aging line varying from 0.82 to 1.12.

Commercial Medicare Data

The HCCI database includes data for covered members younger and older than age 65. Unfortunately, the commercial data does not have indicators for active/retired status for members over age 65 or, at the time of the study, indicators of which data is for Medicare Advantage members. . The observed age cost curve for the commercial post-65 per capita costs shows a consistently declining relative cost. This can be explained by a mix of active members, where the insured plan is primary, and retired members, where Medicare is primary at the earlier years, plus a mixture of Medicare Advantage members, where there is no direct offset of charges for Medicare payments in the data. The resulting age curve may be useful if a similar mix of active/retired members and type of plan is being studied. However, because they are very different populations, any such analysis should split out these populations to better understand their cost patterns.

Chart 21: Commercial Costs by Age Over 65



The above chart shows the raw data for all commercial data. All of the separate splits of data by market segment and plan type were similar. Because these results are likely due to a non-homogeneous mix of actives and retirees, and types of insurance coverage, the analysis of post-65 costs is limited to the use of the Medicare 5% sample with the exception of the prescription drug data which was shown in the prior section. The same issue of mixing of data with Medicare offsets and without offsets is not an issue with the prescription drug data.

Health Care Costs by Condition

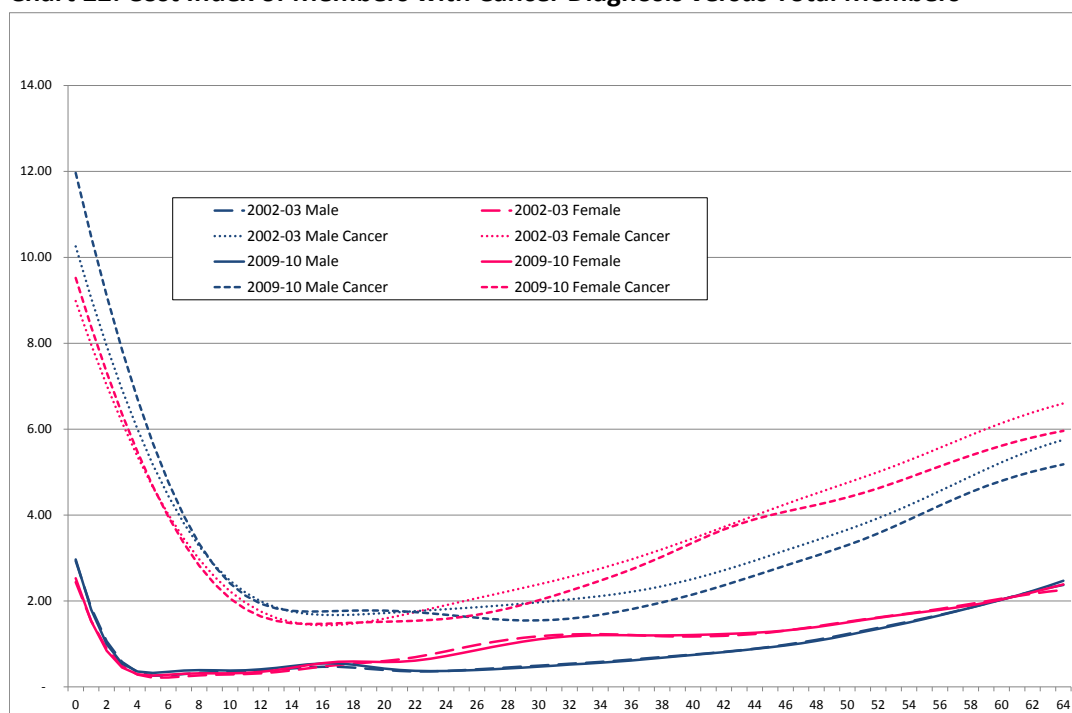
Three different conditions were analyzed for cost variations by age including cancer, circulatory and musculoskeletal conditions. These three were chosen because they had the most occurrences for both

the commercial and Medicare populations. For uniformity of plan type, the group PPO members only are studied for the commercial population.

The data was reviewed in two different ways. One was to develop a cost index for the population with the disease and compare it to the overall index. The second method was to compare the disease population cost index to the overall cost index to derive a cost ratio for the disease population relative to the overall population. The second approach creates an interesting measure that makes it easier to show both the commercial and Medicare populations together, so that method is used for most of the analysis.

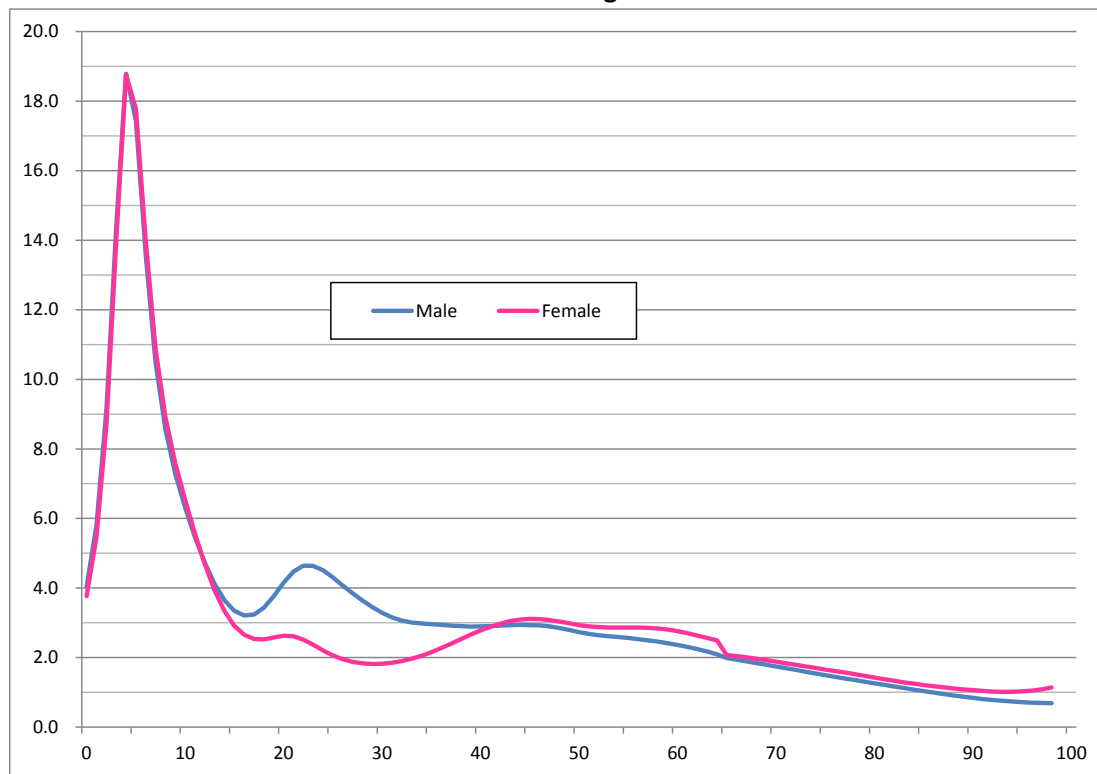
The following chart shows the relationship of costs for those with cancer compared to the total population for the commercial group.

Chart 22: Cost Index of Members with Cancer Diagnosis versus Total Members



For the two study periods (2002-03 and 2009-10), the resulting indices are relatively similar with high costs for those with cancer at the younger ages and converging in the twenties and then diverging again at the older ages.

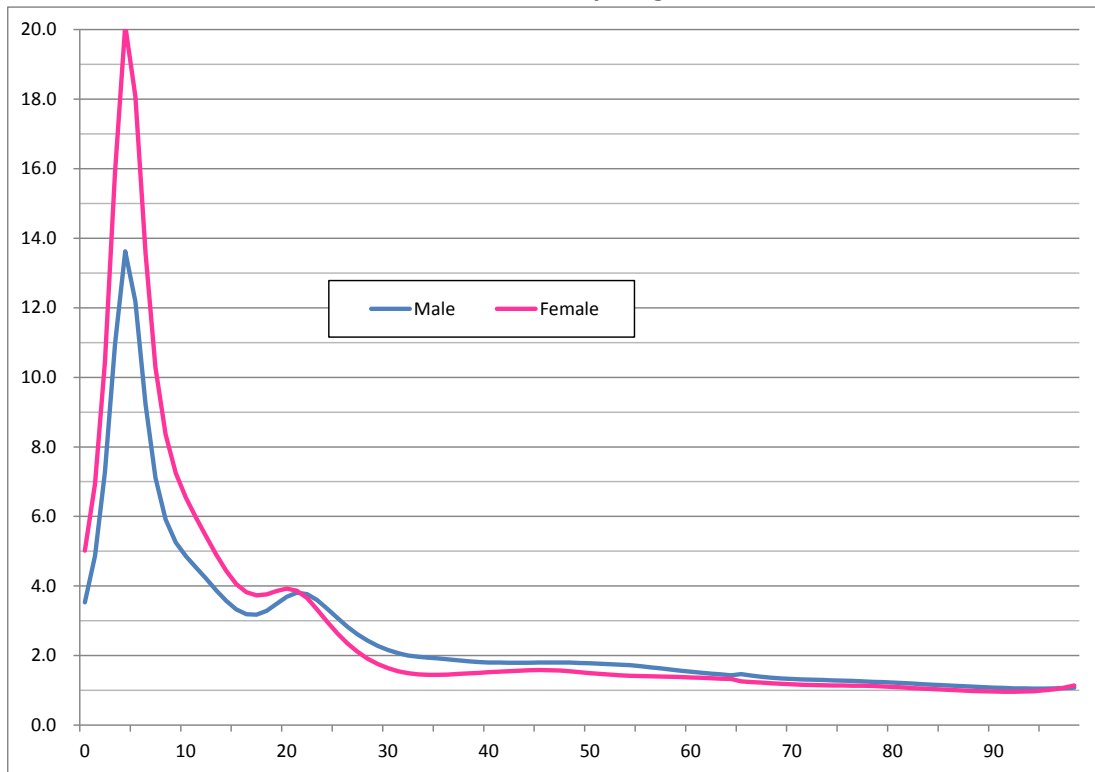
Chart 23: Cost Ratio of Members with Cancer Diagnosis to Total Members – 2009-10



Since the 2002-03 and 2009-10 study periods showed similar aging curves, only the 2009-10 study period is shown in these ratio charts. The above chart also brings in similar data for the Medicare population. Note that even though these are two separate data sources, the ratio indices are very compatible and join at age 65 with remarkably similar results.

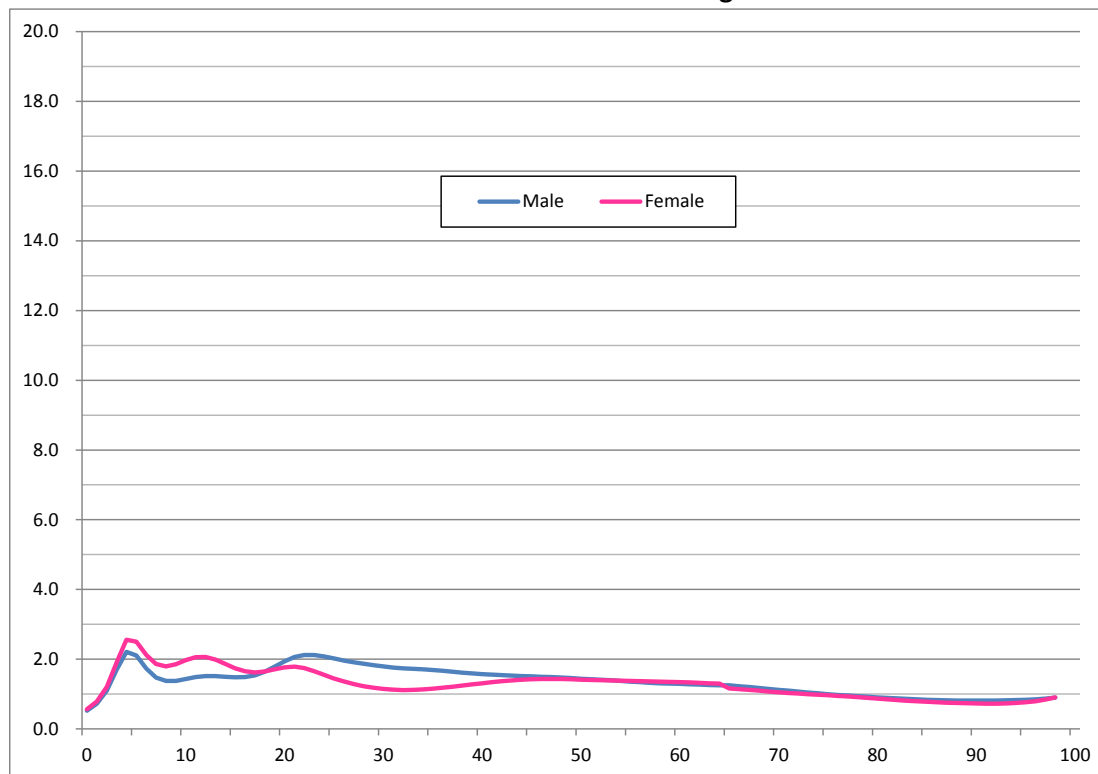
For members with cancer, health care costs are extremely high compared to total members for children and stabilizes around 3.0 (i.e., three-times average costs) during the working years of adults and gradually decreases over age 65. For males, the ratio declines more rapidly than females at the older ages and goes below the average 1.00 starting in the mid-80s.

Chart 24: Cost Ratio of Members with Circulatory Diagnosis to Total Members – 2009-10



Members with circulatory conditions have a similar ratio to average costs as those with cancer except the ratio levels off at 1.5 instead of 3.0 during the working years and decreases slowly above age 65 stabilizing at about 1.0.

Chart 25: Cost Ratio of Members with Musculoskeletal Diagnosis to Total Members – 2009-10



Members with musculoskeletal conditions show a different ratio pattern than the other two conditions and have much less variation from the average (note the Y-axis scale is kept at 0.0 to 20.0, the same as for the other two conditions). The index rises in the early years and somewhat stabilizes during the teen years and twenties and then begin to decrease from the 30s on. The ratio actually goes below 1.0 for members over age 75 meaning that their health care costs are less than the average.

Implications of Conditions

In general, members with some type of identified condition have costs higher than the average. As the prevalence of these conditions change over time, it will influence costs by age—especially at the younger ages. Two ratios to watch are the ones that dip below the average (males over 85 for cancer conditions and both genders over age 75 for musculoskeletal conditions) if different treatments become available for patients at those ages, costs could increase.

For the three conditions studied, the following chart shows the prevalence of each between the 2002-03 and 2009-10 study periods. For example, in the 2002-03 data, 2.4 percent of the members had cancer as their primary diagnosis.

| Condition | 2002-03 | 2009-10 |
|-----------------|---------|---------|
| Cancer | 2.4% | 2.6% |
| Circulatory | 2.8% | 3.1% |
| Musculoskeletal | 7.3% | 8.6% |

Five-Year Age Group Curve

Age/gender medical costs are often summarized by costs in five-year age groups (children grouped as one group despite the recognized high costs in the early years). The following table was derived from the Group PPO data from the 2010 study period. As discussed above, commercial costs above age 65 included a mix of active (private plan primary) and retired (Medicare primary) so that an active cost age 65 and over is not readily available. The following table extrapolated the age 65 cost by fitting a geometric curve to the age 60 through 64 costs. Costs after age 65 were based on the increase in costs of the Medicare allowable charge costs and net costs including prescription drugs. Active costs over age 70 were assumed the average of ages 70 through 74.

Table 5: Five-Year Age/Gender Table

| Group | Age | Male | Female |
|------------------------|-------|-------|--------|
| Children | | 0.533 | 0.533 |
| Actives | < 20 | 0.500 | 0.587 |
| | 20-24 | 0.394 | 0.625 |
| | 25-29 | 0.410 | 0.922 |
| | 30-34 | 0.515 | 1.165 |
| | 35-39 | 0.646 | 1.200 |
| | 40-44 | 0.805 | 1.229 |
| | 45-49 | 1.016 | 1.349 |
| | 50-54 | 1.339 | 1.587 |
| | 55-59 | 1.740 | 1.835 |
| | 60-64 | 2.233 | 2.184 |
| | 65-69 | 2.786 | 2.618 |
| | 70+ | 3.338 | 3.087 |
| Retiree (Total) | 65-69 | 0.766 | 0.746 |
| (with Rx) | 70-74 | 0.918 | 0.880 |
| | 75-79 | 1.084 | 1.021 |
| | 80-84 | 1.246 | 1.171 |
| | 85-89 | 1.388 | 1.309 |
| | 90-94 | 1.511 | 1.397 |
| | 95+ | 1.606 | 1.351 |
| Retiree (Net) | 65-69 | 0.933 | 0.886 |
| (with Rx) | 70-74 | 1.025 | 0.973 |
| | 75-79 | 1.089 | 1.040 |
| | 80-84 | 1.111 | 1.071 |
| | 85-89 | 1.073 | 1.044 |
| | 90-94 | 1.004 | 0.958 |
| | 95+ | 0.931 | 0.827 |

A specific use of the above table is to use it for retiree medical actuarial valuations when a premium rate is provided that is based on a blend of active employee and pre-65 retiree experience. Assuming that active employee and retiree morbidity is the same at the same age, a \$6,000 blended premium rate and the following demographics, the single premium rate may be split by age and group.

Table 6: Example of Splitting Blended Premium Rate

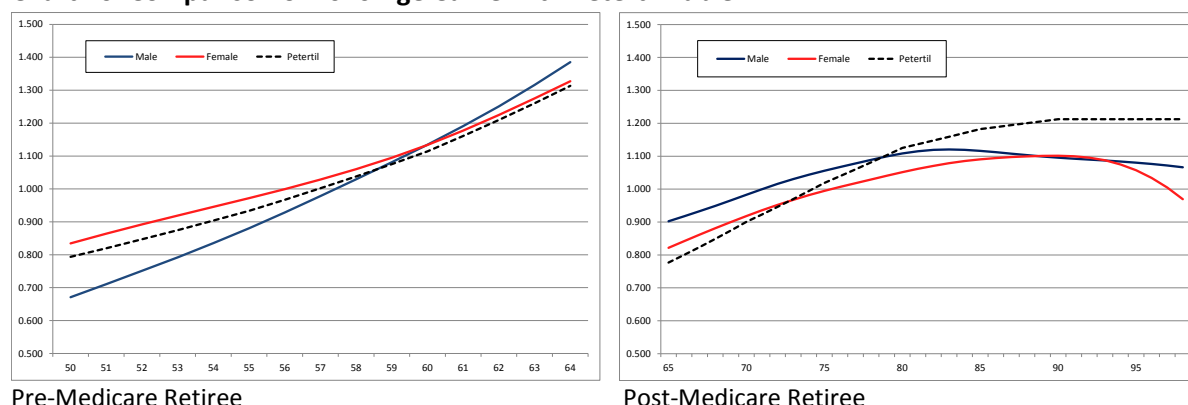
| Group | Age | Member Count | | Age/Gender Factor | | Premium Rate | |
|----------------|--------------|--------------|--------|-------------------|--------|-----------------|--------|
| | | Male | Female | Male | Female | Male | Female |
| Actives | < 20 | 50 | 20 | 0.500 | 0.587 | 2,347 | 2,755 |
| | 20-24 | 80 | 75 | 0.394 | 0.625 | 1,850 | 2,935 |
| | 25-29 | 100 | 125 | 0.410 | 0.922 | 1,925 | 4,330 |
| | 30-34 | 200 | 200 | 0.515 | 1.165 | 2,416 | 5,472 |
| | 35-39 | 225 | 250 | 0.646 | 1.200 | 3,034 | 5,636 |
| | 40-44 | 225 | 250 | 0.805 | 1.229 | 3,780 | 5,769 |
| | 45-49 | 250 | 300 | 1.016 | 1.349 | 4,773 | 6,336 |
| | 50-54 | 200 | 200 | 1.339 | 1.587 | 6,286 | 7,454 |
| | 55-59 | 150 | 200 | 1.740 | 1.835 | 8,172 | 8,617 |
| | 60-64 | 100 | 50 | 2.233 | 2.184 | 10,487 | 10,254 |
| | 65-69 | 50 | 50 | 2.786 | 2.618 | 13,081 | 12,292 |
| | 70+ | 10 | 0 | 3.338 | 3.087 | 15,675 | 14,495 |
| | Total | 3,360 | | 1.205 | | \$ 5,659 | |
| Retiree | 50-54 | 10 | 20 | 1.339 | 1.587 | 6,286 | 7,454 |
| | 55-59 | 50 | 50 | 1.740 | 1.835 | 8,172 | 8,617 |
| | 60-64 | 100 | 100 | 2.233 | 2.184 | 10,487 | 10,254 |
| | Total | 330 | | 2.017 | | \$ 9,471 | |
| | | | | | | | |
| Total | | 3,690 | | 1.278 | | \$ 6,000 | |

In the above table, the member count (employees, retirees and covered dependents) and the \$6,000 blended premium are the given numbers. Cross-multiplying the member counts with the age/gender factors develops the total average 1.278 factor as well as the 1.205 and 2.017 average factors for actives and retirees, respectively. The premium rates are developed by multiplying the appropriate age/gender factor with the average age-adjusted premium rate of \$4,696 ($\$6,000 \div 1.278$). For example, the male age 20-24 rate is $\$4,696 \times 0.394 = \$1,850$.

As a result, the average active employee's premium rate is \$5,659 or about 94 percent of the blended rate and the average pre-65 retiree premium rate is \$9,471 or 158 percent of the blended rate (and 167 percent of the active rate).

Readers using the age curve developed in this study are encouraged to read a study by Jeff Petertil that appeared in the North American Actuarial Journal.¹⁰ In Table 4 of that study, a representative age curve table for a group of retirees was presented, in a form showing one-year age-to-age factors by age bands. For comparison purposes to this current study, the factors from that representative age curve were converted to a comparable cost index for the under age 65 commercial population and the Medicare population. The representative table starts at age 50 as the analysis was specifically for health care costs in retirement.

Chart 26: Comparison of 2010 Age Curve with Petertil Table



The representative age curve was intended to be a unisex age curve. It does a pretty good job following pre-Medicare retiree 2010 experience—a little high before age 60 and a little low after 60. The post-Medicare representative age curve produces a steeper curve than 2010 experience age curve that was developed in Table 4 of this study. Depending on design, the 2010 experience age curve will change which makes this comparison more difficult.

Aging in Health Care Costs of the United States

The preceding charts and discussion have shown that there have been slight changes in the “shape” of the health care cost curve over the last decade. The change in the shape of the curve may be attributed to many variables including generational attitudes toward health, treatment pattern changes of conditions over time, changing medical technology and the availability of more and different drug treatments. However, one use of the resulting age curve is to demonstrate its overall contribution to health care cost trends over the last several years. Assuming the shape of the curve is similar for the total United States population, the above indices can be applied to the age of the U.S. population at various years to determine the impact of aging on health care costs.

The following table shows the U.S. population by age groupings at various years along with the total national health expenditures per capita.

¹⁰ Petertil, Jeffrey P. "Aging Curves for Health Care Costs In retirement." *North American Actuarial Journal* 9.3 (2005): 22-49.

Table 7: Impact of Aging on Health Care Cost Trends from 1930-2010

| Gender | Age Group | 1930 | 1950 | 1970 | 1990 | 2010 | Index |
|------------------------|-------------|------------|------------|------------|------------|------------|-------|
| Male | Under 20 | 24,013,884 | 25,922,460 | 39,138,579 | 36,524,801 | 42,575,112 | 0.500 |
| | 20 to 24 | 5,336,815 | 5,606,293 | 7,917,269 | 9,675,596 | 11,056,339 | 0.394 |
| | 25 to 29 | 4,860,180 | 5,972,078 | 6,621,567 | 10,695,936 | 10,675,799 | 0.410 |
| | 30 to 34 | 4,561,786 | 5,624,723 | 5,595,790 | 10,876,933 | 10,063,421 | 0.515 |
| | 35 to 39 | 4,679,860 | 5,517,544 | 5,412,423 | 9,902,243 | 9,996,641 | 0.646 |
| | 40 to 44 | 4,136,459 | 5,070,269 | 5,818,813 | 8,691,984 | 10,399,409 | 0.805 |
| | 45 to 49 | 3,671,924 | 4,526,366 | 5,851,334 | 6,810,597 | 11,182,579 | 1.016 |
| | 50 to 54 | 3,131,645 | 4,128,648 | 5,347,916 | 5,514,738 | 10,966,236 | 1.339 |
| | 55 to 59 | 2,425,992 | 3,630,046 | 4,765,821 | 5,034,370 | 9,580,184 | 1.740 |
| | 60 to 64 | 1,941,508 | 3,037,838 | 4,026,972 | 4,947,047 | 8,158,625 | 2.233 |
| | 65 to 69 | 1,417,812 | 2,424,561 | 3,122,084 | 4,532,307 | 5,892,007 | 2.786 |
| | 70 to 74 | 991,647 | 1,628,829 | 2,315,000 | 3,409,306 | 4,268,737 | 3.338 |
| | 75 to 79 | 547,604 | 1,001,798 | 1,560,661 | 2,399,768 | 3,183,507 | 3.943 |
| | 80 to 84 | 251,138 | 504,958 | 875,584 | 1,366,094 | 2,302,229 | 4.532 |
| | 85 and over | 117,010 | 236,828 | 542,379 | 857,698 | 1,807,168 | 5.187 |
| Female | Under 20 | 23,595,107 | 25,176,662 | 37,831,821 | 34,797,085 | 40,660,924 | 0.587 |
| | 20 to 24 | 5,533,563 | 5,875,535 | 8,453,752 | 9,344,716 | 10,611,599 | 0.625 |
| | 25 to 29 | 4,973,428 | 6,270,182 | 6,855,426 | 10,617,109 | 10,477,448 | 0.922 |
| | 30 to 34 | 4,558,635 | 5,892,284 | 5,834,646 | 10,985,954 | 10,030,407 | 1.165 |
| | 35 to 39 | 4,528,785 | 5,728,842 | 5,694,428 | 10,060,874 | 10,085,603 | 1.200 |
| | 40 to 44 | 3,853,736 | 5,133,704 | 6,162,141 | 8,923,802 | 10,499,772 | 1.229 |
| | 45 to 49 | 3,370,355 | 4,544,099 | 6,264,605 | 7,061,976 | 11,465,341 | 1.349 |
| | 50 to 54 | 2,844,159 | 4,143,540 | 5,756,102 | 5,835,775 | 11,399,093 | 1.587 |
| | 55 to 59 | 2,219,685 | 3,605,074 | 5,207,207 | 5,497,386 | 10,199,011 | 1.835 |
| | 60 to 64 | 1,809,713 | 3,021,637 | 4,589,812 | 5,669,120 | 8,828,565 | 2.184 |
| | 65 to 69 | 1,352,793 | 2,578,375 | 3,869,541 | 5,579,428 | 6,623,327 | 2.618 |
| | 70 to 74 | 958,357 | 1,783,120 | 3,128,831 | 4,585,517 | 5,057,301 | 3.087 |
| | 75 to 79 | 558,786 | 1,150,609 | 2,274,173 | 3,721,601 | 4,129,865 | 3.585 |
| | 80 to 84 | 283,538 | 620,386 | 1,408,727 | 2,567,645 | 3,447,852 | 4.110 |
| | 85 and over | 155,120 | 340,073 | 968,522 | 2,222,467 | 3,725,588 | 4.692 |
| Average Index | | 0.956 | 1.073 | 1.115 | 1.206 | 1.299 | |
| <i>Annual % change</i> | | | 0.6% | 0.2% | 0.4% | 0.4% | |
| NHE per capita | | \$ 29 | \$ 83 | \$ 356 | \$ 2,854 | \$ 8,417 | |
| <i>Annual % change</i> | | -- | 5.3% | 7.5% | 11.0% | 5.6% | |

Source: NHE for 1930 and 1950 from Social Security Administration; 1970 - 2010 from Centers for Medicare and Medicaid Services

The above chart was developed using the 2010 age curve developed in this paper (the last column labeled "Index"). Using this one stable age curve as a constant is used to show how the population change over the years has contributed to cost increases without the noise created by using different age curves for different years because the shape of the curve may be changing because of contributing factors other than age and gender. The middle columns under the labels 1930 to 2010 are the total population of the United States for each year. Using the population as weights, an "Average Index" is calculated for each year. For example, the weighted average of the index column using the population in 1930 is 0.956. The effect of aging can be developed by using these average index numbers for each period. The average annual change is developed by taking the 20th root for each 20-year change. For

example, the most recent annual change from 1990 to 2010 was developed by dividing 1.299 by 1.206 and taking the 20th root [$0.4\% = (1.299 \div 1.206)^{0.05} - 1.00$]

National health expenditure per capita costs have increased between 5 to 11 percent per year for the four 20-year periods since 1930 and the aging demographics have contributed less than 0.5 percent each year except 1930 to 1950. The annual average increase in the NHE was 7.3 percent from 1930 through 2010 while the average aging index increased at 0.4 percent. Over this same time period, the consumer price index grew from an average of 16.7 in 1930 to an average of 218.06 in 2010—an annual average of 3.3 percent.¹¹ Assuming CPI is a reasonable proxy for inflation, the NHE grew at a real rate of 4.0 percent and aging accounted for about 10 percent of the real growth.

This result is consistent with other studies. For example, a Health Affairs article¹² from 2012 estimated that demographic effects (age and gender) on real per capita health spending growth from 1960 through 2007 accounted for 7.2 percent. CPI growth from 1950 through 2010 and 1970 through 2010 was 3.7 percent and 4.4 percent, respectively.¹³ The annual NHE per capita growth from the same years was 8.0 percent and 8.2 percent so real NHE per capita growth was 4.3 percent from 1950 and 3.8 percent from 1970. The average annual change in the average aging index from 1950 through 2010 was 0.3 percent and from 1970 through 2010 it was 0.4 percent. Demographic changes therefore accounted for 7.5 percent of the health care growth from 1950 and 10.0 percent from 1970. The Health Affairs article related real growth to GDP and using the implicit price deflator as a measure of inflation produces slightly different results with demographic changes accounting for 7.0 percent and 8.7 percent of real per capita health care growth from 1950 and 1970 to 2010, respectively.¹⁴

The aging curve index was extrapolated beyond age 70 from the commercial age curve by using the Medicare aging curve. A refinement of this aging factor development would be to account for the difference between Medicare and commercial plan payments but that difference has changed over time since the adoption of Medicare. The author does not believe that such refinement will significantly change the result.

¹¹ During the same time period, the implicit price deflator, which is often cited as a better measure of inflation, increased an average of 3.0 percent.

¹² Smith, Sheila, Joseph P. Newhouse, and Mark S. Freeland. "Income, insurance, and technology: Why does health spending outpace economic growth?." *Health Affairs* 28.5 (2009): 1276-1284.

¹³ The average CPI-U for 1930 was 16.7, for 1950 it was 24.1, for 1970 it was 38.8 and for 2010 it was 218.1, U.S. Bureau of Labor Statistics. *Consumer Price Index, All Urban Consumers*. Washington: Department of Labor, 2012.

¹⁴ The implicit price deflator for the five years shown (1930-2010) were 10.226, 14.656, 24.338, 72.262 and 110.993, Implicit Price Deflators for Gross Domestic Product, U.S. Department of Commerce, Bureau of Economic Analysis.

Follow-Up Studies

The results of this study have produced several different analysis of how health care costs vary by age and gender. However, as the author compiled results, there were limitations to the available data that would have been useful for other analysis. The additional data and studies that could be done include:

- There was not coding available in the database to identify members who were actively working versus retired. It would be nice to have this additional data to study the impact that retired status has on costs relative to the active employee population.
- The commercial data for members over age 65 were not used in this study because the data included a mix of active and retired members (active members over age 65 are likely still covered by the employer plan as their primary coverage) and types of coverage (Medicare Advantage HMO, PPO and private fee-for-service; employer coverage, individual coverage—MA claims would not include a Medicare offset whereas employer and individual coverage would). These separate indicators are needed to effectively use the post-age 65 commercial data.
- Interesting analysis has been done in other studies regarding health care costs in the last year of life relative to other years. This database includes an extremely valuable base to do further studies in this area so mortality statistics will need to be merged into this claims database to do such a study.
- There was an observed increase in relative costs (i.e., higher index) for both males and females in pharmacy costs in their teens and early 20s. Further analysis could be done to better understand the drivers in the increase.

Data, Methods and Assumptions

The key source of data was the Health Care Cost Institute (HCCI) commercial data from 2001 through 2010. The Medicare fee-for-service analysis was based on the 5 percent sample of Medicare data for years 2006 through 2010. Summarized data was received by the researcher for use in this analysis. This section documents the data received, methods used to evaluate the data and any assumptions used to develop results.

Data

Summarized data was prepared by the data analytics group employed by HCCI for this study. In general, the data received for the commercial and Medicare datasets were similar with some slight differences in claim amounts received so that analysis could be made of costs not paid by Medicare. In general, the following data was received.

- Calendar year: Data was grouped by single years based on member enrollment, fill date for pharmacy data, admission date for inpatient stays and service date for other providers. Commercial data was received for years 2001 through 2010 and Medicare data for years 2006 through 2010. After review, the 2001 calendar year data was not used due to significantly lower exposures relative to the other years. Enrollment data is included for all years, including members with no claims.

- Plan type: Data was grouped by HMO and PPO/POS/FFS. Medicare claims were classified as PPO/POS/FFS.
- Market segment: Individual and group business segments were separately identified.
- Age: The HCCI data only include the members' year of birth. Age was calculated based on set calculations utilized by HCCI which is to determine the age monthly by subtracting an assumed birthday of July 1 of the year of birth from the reporting month. For this data, the lowest age was used for the reported data. Therefore, newborns are classified as age -1 in the data received. Ages for commercial data were capped at age 90 and age 98 for the Medicare data.
- Gender: Male and female indicators were provided.
- Subscriber relationship: Self and dependent indicators were provided.
- Primary disease condition: Each member was assigned to a single major diagnostic category based on DRGs for inpatient stays and ICD-9 diagnosis codes for other services.
- Medical member months: Each record includes the number of months a member was eligible for coverage whether or not a claim was reported. That is, zero cost claimants are included.
- Pharmacy member months: Since not all members in the database have both medical and outpatient pharmacy claims data submitted, a separate count of the number of months a member was eligible for pharmacy coverage is included.
- Inpatient facility allowed amount: Total covered amount (allowed charge) is summarized for all inpatient service stays. These include hospital stays as well as skilled nursing facilities, hospice and mental health hospitals.
- Outpatient facility allowed amount: Total outpatient facility allowed charges include all identified facility charges that are not inpatient charges.
- Professional and other allowed amount: All professional charges identified by HCCI which are basically those that do not have a valid revenue code that identifies them as a facility claim.
- Pharmacy allowed amount: Outpatient pharmacy costs are separately identified in the data warehouse. Amounts reported include all charges eligible for benefit payment including ingredient costs, dispensing fees and taxes.

In addition, the Medicare data included amounts so that both the total allowed charge (the Medicare allowable amount) and the Medicare benefit payment could be identified. For post-65 analysis, both the total Medicare allowed charge as well as the Medicare net charge is studied. The net charge is the amount that may be supplemented by private plans and represents the difference between the total allowed charge and the Medicare benefit payment.

Methods

Data was summarized for several different study segments for this research to answer specific questions. At a high level, the following key hypotheses are explored in this research:

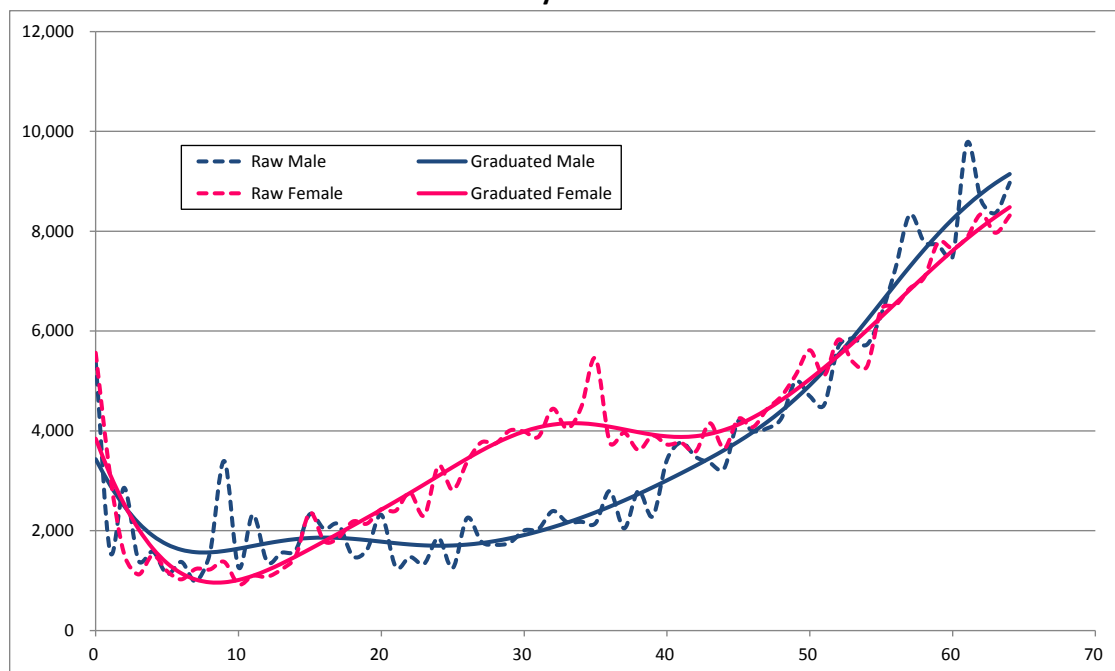
1. How has the health care cost curve changed over time?
2. Is there a difference in the health care cost curve between individual and group business?
3. Is there a difference in the health care cost curve by product (HMO versus PPO/POS)?
4. What are the differences in the health care cost curve by major services (inpatient facility, outpatient facility, professional and pharmacy)?
5. What is the pattern of health care costs by age for some key diagnostic groups?

Separately for the post-65 population, how does the health care cost curve differ between the total allowed costs of Medicare compared to the amounts that may be supplemented by private insurance (the net costs)?

In order to develop the above comparisons, the total data had to be split among several different pieces. As some of the pieces were split, it was evident that the volatility in results due to small exposures deemed the analysis immaterial due to significance of differences. For example, the early years of individual data had relatively low exposures and the resulting age curve looked significantly different than later years but that may be due solely to the lower exposures and not a real change in utilization.

After summarizing costs by age, an underlying pattern of claims was evident in most analysis but for an easier visual comparison of the data points, it was important to smooth the data. The Whittaker-Henderson graduation method was chosen to smooth data.¹⁵ The following two charts illustrate how the raw data was transformed to the graduated smooth data.

Chart 27: Individual HMO data for calendar year 2010

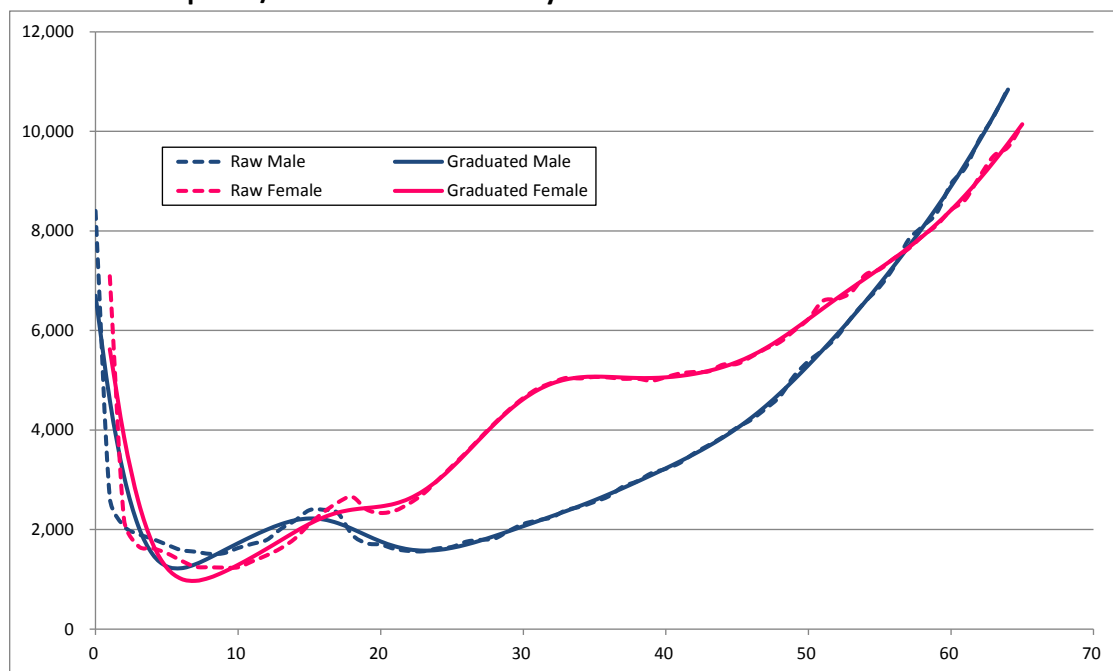


The smoothed data provides a pretty good representation of the underlying data. The r^2 for the above data is 0.562 for males and 0.916 for females for all ages. The correlation is low for males because of the fluctuations in the childhood ages. The r^2 for males aged 20 and over is 0.968 and 0.958 for females.

In contrast, the group PPO/POS data for the same year required less smoothing.

¹⁵ A special thank you to Stuart Klugman with the Society of Actuaries who eagerly helped set up the spreadsheet formulas for smoothing the data using the Whittaker-Henderson graduation method.

Chart 28: Group PPO/POS data for calendar year 2010



The r^2 for males is 0.981 and it is 0.980 for females for all ages. The major differences in the smoothing came at the earlier ages where the slopes are much more dramatic than they are in the adult ages. The r^2 for ages 20 and over is 1.000 for males and 0.999 for females. The big blips in data that are apparent in the individual HMO example is not evident at all in the group PPO/POS example, the key difference being the exposures between the two. The individual HMO data includes 230,000 lives and the group PPO/POS data includes 31 million lives.

The commercial pharmacy data was extended at the oldest ages to match the ages provided in the Medicare data. The commercial data lumped all costs for those aged 90 and over in one cell. The Medicare data went out to age 98. The commercial data was extrapolated by fitting an exponential curve to the commercial data ages 85 through 89.

Some data that was provided by HCCI was not used in this analysis after analyzing the data as above. These include:

- 2001 calendar year commercial data: The exposures were relatively low compared to other years (less than five million compared to all of the other years that included about 14 million in each year and with 2010 that included over 33 million lives).
- Commercial data for members over age 65: It was hoped this data could be compared to the Medicare data for consistency but due to inconsistent observed results, it was decided that there were too many variables affecting the cost curve so that it was not reliable. For all study years, this data showed a steady decrease by age from 65 through age 90 (ages 90 and above were combined). This was not consistent to the Medicare sample data. Possible reasons for the results are that active and retired members could not be separated as the indicator is not in the current HCCI database. Since most active members would have the Medicare as secondary coverage and the reported commercial data is net of Medicare, there will be an increasing

percentage of members with Medicare primary as older members are studied. Therefore, the youngest members will have costs that do not net out Medicare and the oldest members will have Medicare costs netted out of their charges. Also, those covered by Medicare Advantage PPO plans will not have a Medicare offset as the plans are paid directly by Medicare. In other data, Medicare Advantage members tend to be younger than the total Medicare population which biases toward higher costs for younger post-65 members.

- Age 64 data is a mix of members with and without Medicare coverage due to the calculation of the age.
- Only three diagnostic categories are being studied as the others have relatively low exposures and the volatility by age is too great.

Assumptions

No assumptions are used to replace data or to project data except for the commercial pharmacy data for ages 90 through 98 described in the methods section. All results are used without adjustment. An implicit assumption when study years are grouped is that such grouping does not materially impact the resulting age curve. The data could have trended to a consistent year (e.g., if 2002 and 2003 data were grouped, the 2002 data could have trended to 2003). Given that such trending may perhaps need to be different by age, gender and other characteristics, it was decided not to trend.

Tables 2 and 3 assume a health care trend rate in its underlying projections. A number of trend rates may be selected by different health care experts. For illustrative purposes for this chart, the trend rates calculated by the CMS Office of the Actuary in their latest projections of the national health expenditure are used for both the pre- and post-Medicare costs.¹⁶ They project trends to 2021. After 2021, the 2021 trend rate is continued. The following table shows the trend rates used.

| Year | Trend Rate |
|---------|------------|
| 2010-11 | 3.1% |
| 2011-12 | 3.4% |
| 2012-13 | 2.9% |
| 2013-14 | 6.4% |
| 2014-15 | 4.7% |
| 2015-16 | 5.3% |
| 2016-17 | 5.0% |
| 2017-18 | 5.2% |
| 2018-19 | 5.5% |
| 2019-20 | 5.8% |
| 2020+ | 5.7% |

The above trend rates were used for all medical costs including projecting the Medicare Part B premium.

¹⁶ Office of the Actuary. *National Health Expenditure Projections 2011-2021: Table 1, National health expenditures per capita annual change*. Washington: Centers for Medicare & Medicaid Services, 2012.

2013 per person costs used in the Table 2 projections include:

- Pre-65 allowed cost: \$ 4,838
- Post-65 net allowed cost (medical only): 2,033
- Post-65 prescription drug cost: 1,112
- Medicare Part B premium: 1,259

Note that the pre-65 cost per person is from the latest HCCI report on total allowed charges for 2011 of \$4,547; the post-65 net allowed cost of \$1,853 is from the 2010 data of the 5% Medicare sample and the post-65 prescription drug costs of \$2,703 in 2010 from the commercial data. To approximate the impact of the Medicare Part D program, retirees pay about 25 percent of the standard benefit which pays about half of the drug costs and the remaining costs are paid by the federal government and the pharmaceutical industry. They will also ultimately have to pay 25 percent of the cost of the drugs in the form of copays or coinsurance. Therefore, the projections will start with a \$1,014 cost ($\$2,703 \times 0.50 \times 0.25 + \$2,703 \times 0.25$) in 2010.

Table 3 assumes that the total Medicare per person cost in 2010 is \$11,746 ($\$9,719 + \$2,703 \times 0.75$). Trending for three years to 2013 is \$12,885.

Appendix

The following pages provide the detailed tables underlying each chart included in this study. In addition, an Excel file is available with same tables.

Chart 1: Aggregate Commercial Costs by Age 2002 and 2010

Chart 2: Individual and Group Costs by Age for 2009-10

Chart 3: HMO versus PPO/POS Costs by Age for 2009-10

Chart 4: Subscriber versus Dependent Costs by Age for 2009-10

Chart 5: Unisex Cost Curve by Age for 2010

Chart 6: Inpatient Facility Costs by Age and Experience Year

Chart 7: Outpatient Facility Costs by Age and Experience Year

Chart 8: Professional Costs by Age and Experience Years

Chart 9: Pharmacy Costs by Age and Experience Years

Chart 10: Commercial Costs by Age Over 65

Chart 11: Medicare Total Allowed Amount by Age 2006 through 2010

Chart 12: Medicare Net Allowed Amount by Age 2006 through 2010

Chart 13: Inpatient Facility Costs by Age and Experience Year—Total Allowed Amount

Chart 14: Inpatient Facility Costs by Age and Experience Year—Net Allowed Amount

Chart 15: Outpatient Facility Costs by Age and Experience Year—Total Allowed Amount

Chart 16: Outpatient Facility Costs by Age and Experience Year—Net Allowed Amount

Chart 17: Professional Costs by Age and Experience Years—Total Allowed Amount

Chart 18: Professional Costs by Age and Experience Years—Net Allowed Amount

Chart 19: Pharmacy Costs by Age and Experience Years—Medicare Ages

Chart 20: Comparison of Medicare Costs (Gross, Medicare, and Net)

Chart 21: Net Medicare Costs by Age for Specific Plan Design

Chart 22: Cost Index of Members with Cancer Diagnosis versus Total Members

Chart 23: Cost Ratio of Members with Cancer Diagnosis to Total Members – 2009-10

Chart 24: Cost Ratio of Members with Circulatory Diagnosis to Total Members – 2009-10

Chart 25: Cost Ratio of Members with Musculoskeletal Diagnosis to Total Members – 2009-10

Chart 26: Comparison of 2010 Age Curve with Petertil Table

Chart 27: Individual HMO data for calendar year 2010

Chart 28: Group PPO/POS data for calendar year 2010

Chart 1: Aggregate Commercial Costs by Age 2002 and 2010

| Age | 2002 | | 2010 | |
|-----|------|--------|------|--------|
| | Male | Female | Male | Female |
| 0 | 2.28 | 1.94 | 2.49 | 2.12 |
| 1 | 1.63 | 1.38 | 1.73 | 1.46 |
| 2 | 1.11 | 0.93 | 1.14 | 0.96 |
| 3 | 0.73 | 0.61 | 0.72 | 0.61 |
| 4 | 0.48 | 0.39 | 0.46 | 0.38 |
| 5 | 0.33 | 0.26 | 0.33 | 0.27 |
| 6 | 0.25 | 0.20 | 0.28 | 0.22 |
| 7 | 0.23 | 0.18 | 0.28 | 0.22 |
| 8 | 0.25 | 0.20 | 0.31 | 0.25 |
| 9 | 0.28 | 0.23 | 0.35 | 0.28 |
| 10 | 0.33 | 0.26 | 0.39 | 0.32 |
| 11 | 0.37 | 0.30 | 0.42 | 0.35 |
| 12 | 0.40 | 0.34 | 0.45 | 0.39 |
| 13 | 0.43 | 0.37 | 0.48 | 0.43 |
| 14 | 0.45 | 0.41 | 0.50 | 0.47 |
| 15 | 0.47 | 0.44 | 0.52 | 0.50 |
| 16 | 0.47 | 0.48 | 0.53 | 0.54 |
| 17 | 0.46 | 0.51 | 0.53 | 0.56 |
| 18 | 0.45 | 0.55 | 0.51 | 0.58 |
| 19 | 0.43 | 0.59 | 0.49 | 0.59 |
| 20 | 0.41 | 0.63 | 0.46 | 0.60 |
| 21 | 0.39 | 0.68 | 0.43 | 0.61 |
| 22 | 0.38 | 0.74 | 0.40 | 0.64 |
| 23 | 0.38 | 0.80 | 0.39 | 0.68 |
| 24 | 0.38 | 0.86 | 0.38 | 0.73 |
| 25 | 0.39 | 0.93 | 0.39 | 0.79 |
| 26 | 0.40 | 0.99 | 0.40 | 0.86 |
| 27 | 0.42 | 1.05 | 0.41 | 0.93 |
| 28 | 0.44 | 1.10 | 0.43 | 1.00 |
| 29 | 0.46 | 1.14 | 0.45 | 1.06 |
| 30 | 0.49 | 1.17 | 0.47 | 1.11 |
| 31 | 0.51 | 1.20 | 0.49 | 1.15 |
| 32 | 0.53 | 1.21 | 0.52 | 1.18 |
| 33 | 0.55 | 1.21 | 0.54 | 1.20 |
| 34 | 0.58 | 1.20 | 0.56 | 1.21 |
| 35 | 0.60 | 1.19 | 0.59 | 1.21 |
| 36 | 0.63 | 1.18 | 0.61 | 1.21 |
| 37 | 0.65 | 1.17 | 0.64 | 1.20 |
| 38 | 0.68 | 1.16 | 0.67 | 1.20 |
| 39 | 0.71 | 1.15 | 0.70 | 1.19 |
| 40 | 0.74 | 1.15 | 0.73 | 1.19 |
| 41 | 0.77 | 1.16 | 0.77 | 1.20 |
| 42 | 0.81 | 1.17 | 0.80 | 1.21 |
| 43 | 0.84 | 1.19 | 0.84 | 1.22 |
| 44 | 0.88 | 1.22 | 0.87 | 1.24 |
| 45 | 0.93 | 1.25 | 0.91 | 1.26 |
| 46 | 0.98 | 1.29 | 0.96 | 1.29 |
| 47 | 1.03 | 1.34 | 1.01 | 1.33 |
| 48 | 1.08 | 1.39 | 1.06 | 1.37 |
| 49 | 1.14 | 1.44 | 1.12 | 1.42 |
| 50 | 1.21 | 1.49 | 1.19 | 1.47 |
| 51 | 1.28 | 1.54 | 1.26 | 1.52 |
| 52 | 1.35 | 1.60 | 1.33 | 1.57 |
| 53 | 1.42 | 1.65 | 1.41 | 1.62 |
| 54 | 1.50 | 1.70 | 1.48 | 1.66 |
| 55 | 1.58 | 1.76 | 1.57 | 1.71 |
| 56 | 1.66 | 1.81 | 1.65 | 1.76 |
| 57 | 1.74 | 1.87 | 1.74 | 1.81 |
| 58 | 1.83 | 1.92 | 1.83 | 1.87 |
| 59 | 1.92 | 1.98 | 1.93 | 1.93 |
| 60 | 2.01 | 2.04 | 2.02 | 1.99 |
| 61 | 2.11 | 2.11 | 2.12 | 2.07 |
| 62 | 2.21 | 2.17 | 2.23 | 2.15 |
| 63 | 2.31 | 2.23 | 2.34 | 2.23 |
| 64 | 2.41 | 2.29 | 2.46 | 2.32 |

Chart 2: Individual and Group Costs by Age for 2009-10

| Age | 2009-10 Individual | | 2009-10 Group | |
|-----|--------------------|--------|---------------|--------|
| | Male | Female | Male | Female |
| 0 | 1.88 | 1.34 | 2.55 | 2.18 |
| 1 | 1.49 | 1.08 | 1.70 | 1.45 |
| 2 | 1.17 | 0.85 | 1.07 | 0.91 |
| 3 | 0.90 | 0.67 | 0.65 | 0.55 |
| 4 | 0.69 | 0.52 | 0.42 | 0.34 |
| 5 | 0.54 | 0.41 | 0.31 | 0.25 |
| 6 | 0.43 | 0.34 | 0.29 | 0.23 |
| 7 | 0.37 | 0.29 | 0.31 | 0.25 |
| 8 | 0.33 | 0.27 | 0.34 | 0.27 |
| 9 | 0.33 | 0.28 | 0.37 | 0.30 |
| 10 | 0.35 | 0.30 | 0.39 | 0.32 |
| 11 | 0.38 | 0.33 | 0.41 | 0.35 |
| 12 | 0.42 | 0.37 | 0.44 | 0.38 |
| 13 | 0.46 | 0.41 | 0.46 | 0.41 |
| 14 | 0.50 | 0.46 | 0.49 | 0.45 |
| 15 | 0.54 | 0.51 | 0.51 | 0.50 |
| 16 | 0.57 | 0.55 | 0.53 | 0.53 |
| 17 | 0.59 | 0.59 | 0.53 | 0.56 |
| 18 | 0.60 | 0.62 | 0.51 | 0.58 |
| 19 | 0.60 | 0.64 | 0.48 | 0.59 |
| 20 | 0.60 | 0.67 | 0.44 | 0.60 |
| 21 | 0.59 | 0.69 | 0.41 | 0.61 |
| 22 | 0.58 | 0.70 | 0.39 | 0.64 |
| 23 | 0.57 | 0.72 | 0.38 | 0.68 |
| 24 | 0.56 | 0.75 | 0.38 | 0.73 |
| 25 | 0.56 | 0.77 | 0.38 | 0.80 |
| 26 | 0.56 | 0.80 | 0.39 | 0.87 |
| 27 | 0.56 | 0.84 | 0.41 | 0.94 |
| 28 | 0.57 | 0.87 | 0.43 | 1.01 |
| 29 | 0.58 | 0.91 | 0.45 | 1.07 |
| 30 | 0.59 | 0.95 | 0.47 | 1.12 |
| 31 | 0.60 | 0.98 | 0.49 | 1.15 |
| 32 | 0.61 | 1.01 | 0.52 | 1.18 |
| 33 | 0.63 | 1.03 | 0.54 | 1.20 |
| 34 | 0.64 | 1.05 | 0.56 | 1.20 |
| 35 | 0.66 | 1.06 | 0.58 | 1.20 |
| 36 | 0.68 | 1.07 | 0.61 | 1.20 |
| 37 | 0.70 | 1.08 | 0.64 | 1.19 |
| 38 | 0.72 | 1.09 | 0.67 | 1.19 |
| 39 | 0.75 | 1.10 | 0.70 | 1.19 |
| 40 | 0.77 | 1.11 | 0.73 | 1.19 |
| 41 | 0.81 | 1.13 | 0.77 | 1.20 |
| 42 | 0.84 | 1.14 | 0.80 | 1.21 |
| 43 | 0.88 | 1.17 | 0.84 | 1.22 |
| 44 | 0.92 | 1.19 | 0.87 | 1.24 |
| 45 | 0.96 | 1.23 | 0.91 | 1.26 |
| 46 | 1.01 | 1.26 | 0.96 | 1.29 |
| 47 | 1.06 | 1.30 | 1.01 | 1.33 |
| 48 | 1.11 | 1.34 | 1.06 | 1.38 |
| 49 | 1.17 | 1.39 | 1.12 | 1.43 |
| 50 | 1.23 | 1.43 | 1.19 | 1.48 |
| 51 | 1.29 | 1.48 | 1.26 | 1.53 |
| 52 | 1.36 | 1.52 | 1.34 | 1.58 |
| 53 | 1.44 | 1.57 | 1.41 | 1.63 |
| 54 | 1.52 | 1.61 | 1.49 | 1.68 |
| 55 | 1.60 | 1.66 | 1.57 | 1.72 |
| 56 | 1.68 | 1.71 | 1.66 | 1.77 |
| 57 | 1.77 | 1.76 | 1.74 | 1.82 |
| 58 | 1.85 | 1.81 | 1.83 | 1.88 |
| 59 | 1.94 | 1.86 | 1.93 | 1.94 |
| 60 | 2.02 | 1.92 | 2.02 | 2.01 |
| 61 | 2.10 | 1.97 | 2.12 | 2.09 |
| 62 | 2.18 | 2.03 | 2.23 | 2.18 |
| 63 | 2.26 | 2.08 | 2.34 | 2.27 |
| 64 | 2.34 | 2.13 | 2.46 | 2.37 |

Chart 3: HMO versus PPO/POS Costs by Age for 2009-10

| Age | 2009-10 HMO | | 2009-10 PPO/POS | |
|-----|-------------|--------|-----------------|--------|
| | Male | Female | Male | Female |
| 0 | 1.70 | 1.49 | 2.56 | 2.18 |
| 1 | 1.30 | 1.13 | 1.72 | 1.46 |
| 2 | 0.98 | 0.84 | 1.09 | 0.92 |
| 3 | 0.72 | 0.61 | 0.67 | 0.56 |
| 4 | 0.54 | 0.45 | 0.42 | 0.35 |
| 5 | 0.42 | 0.33 | 0.31 | 0.25 |
| 6 | 0.35 | 0.27 | 0.29 | 0.23 |
| 7 | 0.32 | 0.24 | 0.30 | 0.24 |
| 8 | 0.32 | 0.24 | 0.33 | 0.27 |
| 9 | 0.34 | 0.26 | 0.37 | 0.30 |
| 10 | 0.37 | 0.29 | 0.39 | 0.32 |
| 11 | 0.40 | 0.33 | 0.42 | 0.35 |
| 12 | 0.44 | 0.38 | 0.44 | 0.38 |
| 13 | 0.48 | 0.42 | 0.47 | 0.41 |
| 14 | 0.51 | 0.46 | 0.49 | 0.45 |
| 15 | 0.53 | 0.50 | 0.51 | 0.50 |
| 16 | 0.54 | 0.54 | 0.52 | 0.53 |
| 17 | 0.54 | 0.58 | 0.52 | 0.56 |
| 18 | 0.54 | 0.62 | 0.50 | 0.57 |
| 19 | 0.52 | 0.65 | 0.47 | 0.58 |
| 20 | 0.51 | 0.69 | 0.44 | 0.58 |
| 21 | 0.49 | 0.73 | 0.41 | 0.60 |
| 22 | 0.47 | 0.77 | 0.38 | 0.62 |
| 23 | 0.45 | 0.82 | 0.37 | 0.66 |
| 24 | 0.44 | 0.88 | 0.37 | 0.71 |
| 25 | 0.44 | 0.94 | 0.37 | 0.78 |
| 26 | 0.44 | 1.00 | 0.39 | 0.85 |
| 27 | 0.44 | 1.06 | 0.40 | 0.92 |
| 28 | 0.45 | 1.12 | 0.42 | 0.99 |
| 29 | 0.46 | 1.17 | 0.45 | 1.05 |
| 30 | 0.48 | 1.21 | 0.47 | 1.10 |
| 31 | 0.49 | 1.24 | 0.49 | 1.14 |
| 32 | 0.51 | 1.25 | 0.51 | 1.17 |
| 33 | 0.53 | 1.26 | 0.54 | 1.19 |
| 34 | 0.55 | 1.25 | 0.56 | 1.20 |
| 35 | 0.57 | 1.24 | 0.59 | 1.20 |
| 36 | 0.60 | 1.23 | 0.61 | 1.20 |
| 37 | 0.62 | 1.21 | 0.64 | 1.19 |
| 38 | 0.65 | 1.19 | 0.67 | 1.19 |
| 39 | 0.68 | 1.17 | 0.70 | 1.19 |
| 40 | 0.72 | 1.16 | 0.74 | 1.20 |
| 41 | 0.75 | 1.15 | 0.77 | 1.21 |
| 42 | 0.79 | 1.15 | 0.80 | 1.22 |
| 43 | 0.83 | 1.16 | 0.84 | 1.23 |
| 44 | 0.86 | 1.17 | 0.88 | 1.25 |
| 45 | 0.91 | 1.20 | 0.92 | 1.28 |
| 46 | 0.95 | 1.23 | 0.96 | 1.31 |
| 47 | 1.00 | 1.27 | 1.01 | 1.34 |
| 48 | 1.05 | 1.31 | 1.07 | 1.39 |
| 49 | 1.11 | 1.36 | 1.13 | 1.44 |
| 50 | 1.17 | 1.41 | 1.20 | 1.49 |
| 51 | 1.24 | 1.46 | 1.27 | 1.54 |
| 52 | 1.32 | 1.51 | 1.34 | 1.59 |
| 53 | 1.40 | 1.56 | 1.41 | 1.64 |
| 54 | 1.48 | 1.61 | 1.49 | 1.69 |
| 55 | 1.56 | 1.66 | 1.57 | 1.74 |
| 56 | 1.65 | 1.71 | 1.66 | 1.78 |
| 57 | 1.75 | 1.76 | 1.74 | 1.83 |
| 58 | 1.85 | 1.82 | 1.83 | 1.89 |
| 59 | 1.95 | 1.89 | 1.92 | 1.95 |
| 60 | 2.06 | 1.96 | 2.02 | 2.02 |
| 61 | 2.17 | 2.05 | 2.11 | 2.10 |
| 62 | 2.28 | 2.14 | 2.22 | 2.18 |
| 63 | 2.40 | 2.24 | 2.33 | 2.28 |
| 64 | 3.52 | 3.28 | 3.33 | 3.22 |

Chart 4: Subscriber versus Dependent Costs by Age for 2009-10

| Age | Subscriber | | Dependent | |
|-----|------------|--------|-----------|--------|
| | Male | Female | Male | Female |
| 0 | | | 2.78 | 2.37 |
| 1 | | | 1.86 | 1.58 |
| 2 | | | 1.17 | 0.99 |
| 3 | | | 0.71 | 0.60 |
| 4 | | | 0.45 | 0.37 |
| 5 | | | 0.34 | 0.28 |
| 6 | | | 0.32 | 0.25 |
| 7 | | | 0.34 | 0.27 |
| 8 | | | 0.37 | 0.30 |
| 9 | | | 0.40 | 0.33 |
| 10 | | | 0.43 | 0.35 |
| 11 | | | 0.45 | 0.38 |
| 12 | | | 0.47 | 0.41 |
| 13 | | | 0.50 | 0.45 |
| 14 | | | 0.53 | 0.49 |
| 15 | | | 0.56 | 0.54 |
| 16 | | | 0.58 | 0.59 |
| 17 | | | 0.58 | 0.63 |
| 18 | 0.20 | 0.21 | 0.57 | 0.65 |
| 19 | 0.21 | 0.27 | 0.55 | 0.68 |
| 20 | 0.23 | 0.35 | 0.53 | 0.70 |
| 21 | 0.26 | 0.44 | 0.52 | 0.73 |
| 22 | 0.29 | 0.54 | 0.51 | 0.78 |
| 23 | 0.33 | 0.63 | 0.51 | 0.86 |
| 24 | 0.36 | 0.71 | 0.52 | 0.95 |
| 25 | 0.39 | 0.79 | 0.54 | 1.05 |
| 26 | 0.41 | 0.87 | 0.56 | 1.15 |
| 27 | 0.43 | 0.94 | 0.59 | 1.24 |
| 28 | 0.45 | 1.00 | 0.61 | 1.32 |
| 29 | 0.47 | 1.06 | 0.63 | 1.37 |
| 30 | 0.49 | 1.12 | 0.66 | 1.41 |
| 31 | 0.51 | 1.16 | 0.68 | 1.42 |
| 32 | 0.54 | 1.20 | 0.69 | 1.42 |
| 33 | 0.56 | 1.23 | 0.71 | 1.41 |
| 34 | 0.58 | 1.26 | 0.73 | 1.39 |
| 35 | 0.61 | 1.27 | 0.75 | 1.36 |
| 36 | 0.64 | 1.28 | 0.78 | 1.34 |
| 37 | 0.67 | 1.28 | 0.80 | 1.32 |
| 38 | 0.70 | 1.29 | 0.84 | 1.31 |
| 39 | 0.74 | 1.29 | 0.87 | 1.30 |
| 40 | 0.77 | 1.30 | 0.91 | 1.30 |
| 41 | 0.81 | 1.31 | 0.95 | 1.30 |
| 42 | 0.84 | 1.32 | 0.99 | 1.31 |
| 43 | 0.88 | 1.33 | 1.04 | 1.32 |
| 44 | 0.92 | 1.35 | 1.09 | 1.35 |
| 45 | 0.96 | 1.37 | 1.14 | 1.38 |
| 46 | 1.00 | 1.40 | 1.20 | 1.42 |
| 47 | 1.06 | 1.43 | 1.26 | 1.47 |
| 48 | 1.11 | 1.48 | 1.33 | 1.53 |
| 49 | 1.18 | 1.52 | 1.40 | 1.59 |
| 50 | 1.25 | 1.57 | 1.49 | 1.66 |
| 51 | 1.32 | 1.62 | 1.57 | 1.72 |
| 52 | 1.40 | 1.67 | 1.66 | 1.79 |
| 53 | 1.47 | 1.72 | 1.76 | 1.86 |
| 54 | 1.56 | 1.76 | 1.85 | 1.92 |
| 55 | 1.64 | 1.81 | 1.95 | 1.99 |
| 56 | 1.73 | 1.85 | 2.05 | 2.05 |
| 57 | 1.82 | 1.91 | 2.15 | 2.11 |
| 58 | 1.92 | 1.97 | 2.26 | 2.18 |
| 59 | 2.01 | 2.04 | 2.36 | 2.25 |
| 60 | 2.12 | 2.12 | 2.48 | 2.34 |
| 61 | 2.23 | 2.20 | 2.59 | 2.43 |
| 62 | 2.34 | 2.29 | 2.72 | 2.53 |
| 63 | 2.45 | 2.39 | 2.85 | 2.64 |
| 64 | 2.58 | 2.49 | 2.98 | 2.76 |

Chart 5: Unisex Cost Curve by Age for 2010

| Age | Male | Female | Unisex | CMS Proposed Unisex |
|-----|------|--------|--------|---------------------|
| 0 | 2.86 | 2.44 | 2.65 | 0.48 |
| 1 | 1.81 | 1.54 | 1.68 | 0.48 |
| 2 | 1.06 | 0.90 | 0.98 | 0.48 |
| 3 | 0.60 | 0.51 | 0.56 | 0.48 |
| 4 | 0.38 | 0.31 | 0.34 | 0.48 |
| 5 | 0.31 | 0.25 | 0.28 | 0.48 |
| 6 | 0.31 | 0.25 | 0.28 | 0.48 |
| 7 | 0.35 | 0.28 | 0.31 | 0.48 |
| 8 | 0.37 | 0.30 | 0.34 | 0.48 |
| 9 | 0.38 | 0.31 | 0.35 | 0.48 |
| 10 | 0.39 | 0.32 | 0.36 | 0.48 |
| 11 | 0.40 | 0.34 | 0.37 | 0.48 |
| 12 | 0.42 | 0.36 | 0.39 | 0.48 |
| 13 | 0.45 | 0.40 | 0.43 | 0.48 |
| 14 | 0.49 | 0.45 | 0.47 | 0.48 |
| 15 | 0.52 | 0.50 | 0.51 | 0.48 |
| 16 | 0.54 | 0.55 | 0.54 | 0.48 |
| 17 | 0.54 | 0.58 | 0.56 | 0.48 |
| 18 | 0.52 | 0.59 | 0.55 | 0.48 |
| 19 | 0.48 | 0.59 | 0.53 | 0.48 |
| 20 | 0.44 | 0.58 | 0.51 | 0.48 |
| 21 | 0.40 | 0.59 | 0.50 | 0.75 |
| 22 | 0.38 | 0.61 | 0.50 | 0.75 |
| 23 | 0.37 | 0.65 | 0.51 | 0.75 |
| 24 | 0.37 | 0.71 | 0.54 | 0.75 |
| 25 | 0.38 | 0.78 | 0.59 | 0.75 |
| 26 | 0.39 | 0.85 | 0.63 | 0.77 |
| 27 | 0.41 | 0.92 | 0.68 | 0.78 |
| 28 | 0.42 | 0.99 | 0.72 | 0.81 |
| 29 | 0.45 | 1.05 | 0.76 | 0.84 |
| 30 | 0.47 | 1.11 | 0.80 | 0.85 |
| 31 | 0.49 | 1.15 | 0.83 | 0.87 |
| 32 | 0.51 | 1.18 | 0.86 | 0.89 |
| 33 | 0.54 | 1.19 | 0.88 | 0.90 |
| 34 | 0.56 | 1.20 | 0.89 | 0.91 |
| 35 | 0.59 | 1.20 | 0.91 | 0.91 |
| 36 | 0.61 | 1.20 | 0.92 | 0.92 |
| 37 | 0.64 | 1.20 | 0.93 | 0.93 |
| 38 | 0.67 | 1.20 | 0.94 | 0.93 |
| 39 | 0.71 | 1.20 | 0.96 | 0.94 |
| 40 | 0.74 | 1.21 | 0.98 | 0.96 |
| 41 | 0.77 | 1.22 | 1.00 | 0.97 |
| 42 | 0.80 | 1.23 | 1.02 | 0.99 |
| 43 | 0.84 | 1.24 | 1.05 | 1.02 |
| 44 | 0.88 | 1.26 | 1.07 | 1.05 |
| 45 | 0.92 | 1.28 | 1.10 | 1.08 |
| 46 | 0.96 | 1.31 | 1.14 | 1.12 |
| 47 | 1.01 | 1.34 | 1.18 | 1.17 |
| 48 | 1.06 | 1.38 | 1.23 | 1.22 |
| 49 | 1.13 | 1.43 | 1.29 | 1.28 |
| 50 | 1.20 | 1.49 | 1.35 | 1.34 |
| 51 | 1.27 | 1.54 | 1.41 | 1.40 |
| 52 | 1.34 | 1.59 | 1.47 | 1.46 |
| 53 | 1.41 | 1.64 | 1.53 | 1.53 |
| 54 | 1.49 | 1.69 | 1.59 | 1.60 |
| 55 | 1.57 | 1.73 | 1.66 | 1.67 |
| 56 | 1.66 | 1.78 | 1.72 | 1.75 |
| 57 | 1.74 | 1.83 | 1.79 | 1.82 |
| 58 | 1.84 | 1.89 | 1.86 | 1.91 |
| 59 | 1.93 | 1.95 | 1.94 | 1.95 |
| 60 | 2.02 | 2.02 | 2.02 | 2.03 |
| 61 | 2.12 | 2.10 | 2.11 | 2.10 |
| 62 | 2.23 | 2.18 | 2.21 | 2.15 |
| 63 | 2.35 | 2.27 | 2.31 | 2.21 |
| 64 | 2.47 | 2.37 | 2.42 | 2.24 |

Chart 6: Inpatient Facility Costs by Age and Experience Year

| Age | 2002-03 | | 2004-05 | | 2006-07 | | 2008-09 | | 2010 | |
|-----|---------|--------|---------|--------|---------|--------|---------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 0 | 7.16 | 5.92 | 6.80 | 6.26 | 7.47 | 6.42 | 7.68 | 6.42 | 7.53 | 6.41 |
| 1 | 4.00 | 3.34 | 3.73 | 3.42 | 4.06 | 3.50 | 4.08 | 3.42 | 4.25 | 3.63 |
| 2 | 1.81 | 1.53 | 1.64 | 1.48 | 1.73 | 1.51 | 1.68 | 1.41 | 1.96 | 1.69 |
| 3 | 0.33 | 0.26 | 0.36 | 0.30 | 0.30 | 0.27 | 0.36 | 0.29 | 0.41 | 0.31 |
| 4 | 0.23 | 0.25 | 0.24 | 0.23 | 0.24 | 0.25 | 0.28 | 0.27 | 0.27 | 0.27 |
| 5 | 0.20 | 0.19 | 0.20 | 0.19 | 0.22 | 0.21 | 0.26 | 0.22 | 0.23 | 0.24 |
| 6 | 0.23 | 0.17 | 0.19 | 0.16 | 0.20 | 0.19 | 0.24 | 0.19 | 0.25 | 0.23 |
| 7 | 0.19 | 0.16 | 0.18 | 0.14 | 0.21 | 0.16 | 0.21 | 0.20 | 0.22 | 0.19 |
| 8 | 0.19 | 0.14 | 0.21 | 0.19 | 0.25 | 0.20 | 0.28 | 0.24 | 0.25 | 0.21 |
| 9 | 0.25 | 0.20 | 0.26 | 0.24 | 0.27 | 0.23 | 0.28 | 0.25 | 0.30 | 0.25 |
| 10 | 0.27 | 0.22 | 0.27 | 0.25 | 0.26 | 0.22 | 0.26 | 0.23 | 0.30 | 0.26 |
| 11 | 0.26 | 0.23 | 0.25 | 0.25 | 0.24 | 0.22 | 0.25 | 0.22 | 0.29 | 0.26 |
| 12 | 0.25 | 0.23 | 0.24 | 0.25 | 0.24 | 0.23 | 0.26 | 0.23 | 0.29 | 0.27 |
| 13 | 0.26 | 0.25 | 0.25 | 0.26 | 0.26 | 0.27 | 0.29 | 0.27 | 0.30 | 0.30 |
| 14 | 0.29 | 0.28 | 0.28 | 0.29 | 0.30 | 0.32 | 0.33 | 0.33 | 0.34 | 0.35 |
| 15 | 0.32 | 0.33 | 0.32 | 0.33 | 0.35 | 0.38 | 0.38 | 0.38 | 0.38 | 0.39 |
| 16 | 0.36 | 0.37 | 0.36 | 0.37 | 0.39 | 0.42 | 0.42 | 0.43 | 0.42 | 0.44 |
| 17 | 0.39 | 0.41 | 0.39 | 0.40 | 0.42 | 0.45 | 0.43 | 0.45 | 0.44 | 0.46 |
| 18 | 0.40 | 0.44 | 0.40 | 0.43 | 0.43 | 0.47 | 0.43 | 0.46 | 0.44 | 0.48 |
| 19 | 0.39 | 0.47 | 0.40 | 0.46 | 0.42 | 0.47 | 0.41 | 0.46 | 0.42 | 0.48 |
| 20 | 0.37 | 0.52 | 0.39 | 0.49 | 0.41 | 0.48 | 0.39 | 0.46 | 0.39 | 0.48 |
| 21 | 0.35 | 0.57 | 0.38 | 0.53 | 0.39 | 0.51 | 0.37 | 0.49 | 0.36 | 0.50 |
| 22 | 0.33 | 0.63 | 0.36 | 0.59 | 0.38 | 0.56 | 0.36 | 0.54 | 0.34 | 0.54 |
| 23 | 0.32 | 0.71 | 0.35 | 0.67 | 0.37 | 0.63 | 0.35 | 0.61 | 0.32 | 0.60 |
| 24 | 0.31 | 0.80 | 0.34 | 0.76 | 0.36 | 0.71 | 0.34 | 0.70 | 0.32 | 0.69 |
| 25 | 0.31 | 0.89 | 0.34 | 0.86 | 0.36 | 0.81 | 0.33 | 0.80 | 0.32 | 0.80 |
| 26 | 0.31 | 0.98 | 0.34 | 0.96 | 0.36 | 0.91 | 0.33 | 0.90 | 0.33 | 0.91 |
| 27 | 0.32 | 1.07 | 0.34 | 1.05 | 0.36 | 1.00 | 0.33 | 1.01 | 0.33 | 1.02 |
| 28 | 0.33 | 1.15 | 0.34 | 1.13 | 0.36 | 1.09 | 0.34 | 1.11 | 0.34 | 1.12 |
| 29 | 0.35 | 1.21 | 0.35 | 1.20 | 0.36 | 1.16 | 0.36 | 1.19 | 0.35 | 1.21 |
| 30 | 0.36 | 1.26 | 0.36 | 1.24 | 0.37 | 1.22 | 0.38 | 1.26 | 0.36 | 1.28 |
| 31 | 0.38 | 1.29 | 0.37 | 1.27 | 0.38 | 1.25 | 0.40 | 1.29 | 0.37 | 1.33 |
| 32 | 0.40 | 1.29 | 0.39 | 1.28 | 0.40 | 1.26 | 0.41 | 1.31 | 0.39 | 1.34 |
| 33 | 0.41 | 1.28 | 0.41 | 1.26 | 0.42 | 1.25 | 0.42 | 1.29 | 0.41 | 1.33 |
| 34 | 0.44 | 1.25 | 0.44 | 1.23 | 0.45 | 1.22 | 0.43 | 1.26 | 0.43 | 1.30 |
| 35 | 0.46 | 1.20 | 0.46 | 1.17 | 0.48 | 1.17 | 0.45 | 1.21 | 0.45 | 1.25 |
| 36 | 0.50 | 1.14 | 0.49 | 1.11 | 0.50 | 1.12 | 0.48 | 1.16 | 0.48 | 1.19 |
| 37 | 0.53 | 1.08 | 0.53 | 1.05 | 0.53 | 1.06 | 0.52 | 1.10 | 0.51 | 1.13 |
| 38 | 0.57 | 1.02 | 0.56 | 0.99 | 0.56 | 1.00 | 0.55 | 1.05 | 0.54 | 1.07 |
| 39 | 0.60 | 0.98 | 0.59 | 0.95 | 0.59 | 0.96 | 0.59 | 1.00 | 0.57 | 1.01 |
| 40 | 0.63 | 0.95 | 0.63 | 0.91 | 0.63 | 0.92 | 0.62 | 0.96 | 0.61 | 0.96 |
| 41 | 0.67 | 0.94 | 0.67 | 0.89 | 0.67 | 0.90 | 0.65 | 0.93 | 0.64 | 0.93 |
| 42 | 0.70 | 0.93 | 0.72 | 0.88 | 0.71 | 0.89 | 0.69 | 0.92 | 0.69 | 0.92 |
| 43 | 0.75 | 0.94 | 0.77 | 0.88 | 0.76 | 0.90 | 0.74 | 0.92 | 0.73 | 0.92 |
| 44 | 0.80 | 0.95 | 0.82 | 0.90 | 0.82 | 0.92 | 0.80 | 0.94 | 0.78 | 0.93 |
| 45 | 0.86 | 0.97 | 0.88 | 0.93 | 0.87 | 0.94 | 0.87 | 0.96 | 0.84 | 0.96 |
| 46 | 0.92 | 1.01 | 0.95 | 0.97 | 0.93 | 0.98 | 0.94 | 1.00 | 0.90 | 0.99 |
| 47 | 1.00 | 1.05 | 1.03 | 1.02 | 1.00 | 1.02 | 1.01 | 1.04 | 0.96 | 1.03 |
| 48 | 1.08 | 1.10 | 1.13 | 1.08 | 1.08 | 1.08 | 1.09 | 1.08 | 1.03 | 1.07 |
| 49 | 1.18 | 1.15 | 1.24 | 1.14 | 1.17 | 1.13 | 1.18 | 1.13 | 1.11 | 1.12 |
| 50 | 1.29 | 1.21 | 1.35 | 1.20 | 1.27 | 1.19 | 1.27 | 1.18 | 1.21 | 1.18 |
| 51 | 1.41 | 1.26 | 1.46 | 1.26 | 1.38 | 1.25 | 1.38 | 1.24 | 1.31 | 1.23 |
| 52 | 1.53 | 1.32 | 1.56 | 1.31 | 1.49 | 1.31 | 1.49 | 1.31 | 1.41 | 1.30 |
| 53 | 1.65 | 1.38 | 1.67 | 1.36 | 1.61 | 1.37 | 1.61 | 1.38 | 1.53 | 1.36 |
| 54 | 1.77 | 1.44 | 1.78 | 1.41 | 1.73 | 1.43 | 1.73 | 1.45 | 1.66 | 1.43 |
| 55 | 1.89 | 1.51 | 1.90 | 1.47 | 1.85 | 1.50 | 1.85 | 1.52 | 1.80 | 1.50 |
| 56 | 2.02 | 1.60 | 2.03 | 1.56 | 1.98 | 1.57 | 1.98 | 1.59 | 1.94 | 1.58 |
| 57 | 2.15 | 1.69 | 2.18 | 1.66 | 2.13 | 1.66 | 2.11 | 1.67 | 2.08 | 1.66 |
| 58 | 2.29 | 1.79 | 2.34 | 1.77 | 2.28 | 1.77 | 2.24 | 1.76 | 2.22 | 1.75 |
| 59 | 2.44 | 1.90 | 2.51 | 1.89 | 2.45 | 1.89 | 2.38 | 1.87 | 2.36 | 1.86 |
| 60 | 2.60 | 2.02 | 2.68 | 2.01 | 2.63 | 2.01 | 2.53 | 1.99 | 2.51 | 1.97 |
| 61 | 2.78 | 2.13 | 2.86 | 2.14 | 2.82 | 2.15 | 2.69 | 2.13 | 2.66 | 2.10 |
| 62 | 2.95 | 2.23 | 3.03 | 2.29 | 3.00 | 2.30 | 2.85 | 2.28 | 2.83 | 2.24 |
| 63 | 3.12 | 2.33 | 3.20 | 2.45 | 3.18 | 2.46 | 3.02 | 2.45 | 3.02 | 2.38 |
| 64 | 3.28 | 2.43 | 3.35 | 2.63 | 3.36 | 2.64 | 3.20 | 2.63 | 3.23 | 2.53 |

Chart 7: Outpatient Facility Costs by Age and Experience Year

| Age | 2002-03 | | 2004-05 | | 2006-07 | | 2008-09 | | 2010 | |
|-----|---------|--------|---------|--------|---------|--------|---------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 0 | 0.94 | 0.71 | 0.86 | 0.64 | 0.86 | 0.64 | 0.85 | 0.62 | 0.86 | 0.61 |
| 1 | 0.83 | 0.63 | 0.78 | 0.59 | 0.78 | 0.58 | 0.77 | 0.57 | 0.77 | 0.56 |
| 2 | 0.73 | 0.56 | 0.70 | 0.53 | 0.69 | 0.53 | 0.69 | 0.52 | 0.68 | 0.51 |
| 3 | 0.63 | 0.49 | 0.62 | 0.47 | 0.61 | 0.47 | 0.61 | 0.46 | 0.60 | 0.46 |
| 4 | 0.55 | 0.43 | 0.54 | 0.42 | 0.54 | 0.42 | 0.54 | 0.42 | 0.53 | 0.42 |
| 5 | 0.49 | 0.38 | 0.48 | 0.38 | 0.47 | 0.37 | 0.48 | 0.37 | 0.47 | 0.38 |
| 6 | 0.43 | 0.35 | 0.42 | 0.34 | 0.42 | 0.34 | 0.43 | 0.34 | 0.42 | 0.34 |
| 7 | 0.39 | 0.32 | 0.37 | 0.31 | 0.38 | 0.31 | 0.39 | 0.32 | 0.38 | 0.32 |
| 8 | 0.35 | 0.30 | 0.34 | 0.29 | 0.35 | 0.29 | 0.35 | 0.30 | 0.35 | 0.29 |
| 9 | 0.33 | 0.28 | 0.32 | 0.28 | 0.33 | 0.27 | 0.33 | 0.28 | 0.33 | 0.28 |
| 10 | 0.32 | 0.27 | 0.31 | 0.27 | 0.32 | 0.27 | 0.33 | 0.28 | 0.33 | 0.28 |
| 11 | 0.33 | 0.28 | 0.32 | 0.28 | 0.33 | 0.28 | 0.34 | 0.29 | 0.34 | 0.29 |
| 12 | 0.35 | 0.30 | 0.34 | 0.30 | 0.35 | 0.30 | 0.36 | 0.31 | 0.36 | 0.32 |
| 13 | 0.39 | 0.34 | 0.37 | 0.33 | 0.38 | 0.34 | 0.39 | 0.36 | 0.40 | 0.38 |
| 14 | 0.43 | 0.40 | 0.41 | 0.39 | 0.43 | 0.40 | 0.44 | 0.42 | 0.45 | 0.44 |
| 15 | 0.46 | 0.46 | 0.46 | 0.45 | 0.48 | 0.47 | 0.49 | 0.49 | 0.50 | 0.51 |
| 16 | 0.49 | 0.52 | 0.49 | 0.51 | 0.52 | 0.53 | 0.53 | 0.56 | 0.54 | 0.57 |
| 17 | 0.50 | 0.57 | 0.51 | 0.56 | 0.54 | 0.58 | 0.55 | 0.60 | 0.55 | 0.61 |
| 18 | 0.50 | 0.60 | 0.52 | 0.61 | 0.53 | 0.61 | 0.54 | 0.62 | 0.55 | 0.62 |
| 19 | 0.49 | 0.63 | 0.50 | 0.64 | 0.51 | 0.62 | 0.51 | 0.61 | 0.53 | 0.62 |
| 20 | 0.47 | 0.66 | 0.49 | 0.66 | 0.49 | 0.63 | 0.48 | 0.60 | 0.50 | 0.61 |
| 21 | 0.45 | 0.69 | 0.47 | 0.68 | 0.46 | 0.63 | 0.45 | 0.60 | 0.47 | 0.61 |
| 22 | 0.45 | 0.72 | 0.46 | 0.71 | 0.45 | 0.65 | 0.43 | 0.62 | 0.45 | 0.62 |
| 23 | 0.45 | 0.76 | 0.45 | 0.74 | 0.44 | 0.68 | 0.43 | 0.65 | 0.44 | 0.64 |
| 24 | 0.47 | 0.81 | 0.46 | 0.78 | 0.44 | 0.71 | 0.43 | 0.69 | 0.43 | 0.68 |
| 25 | 0.48 | 0.86 | 0.47 | 0.83 | 0.44 | 0.76 | 0.44 | 0.73 | 0.44 | 0.72 |
| 26 | 0.50 | 0.90 | 0.49 | 0.87 | 0.46 | 0.80 | 0.45 | 0.78 | 0.44 | 0.77 |
| 27 | 0.53 | 0.94 | 0.51 | 0.91 | 0.47 | 0.85 | 0.47 | 0.83 | 0.46 | 0.82 |
| 28 | 0.55 | 0.98 | 0.52 | 0.95 | 0.49 | 0.89 | 0.49 | 0.87 | 0.48 | 0.87 |
| 29 | 0.57 | 1.01 | 0.54 | 0.98 | 0.51 | 0.93 | 0.51 | 0.92 | 0.50 | 0.92 |
| 30 | 0.58 | 1.03 | 0.56 | 1.01 | 0.53 | 0.97 | 0.53 | 0.96 | 0.52 | 0.96 |
| 31 | 0.60 | 1.05 | 0.58 | 1.04 | 0.56 | 1.01 | 0.55 | 1.00 | 0.55 | 1.01 |
| 32 | 0.62 | 1.07 | 0.60 | 1.06 | 0.58 | 1.04 | 0.57 | 1.04 | 0.57 | 1.04 |
| 33 | 0.64 | 1.09 | 0.62 | 1.08 | 0.60 | 1.07 | 0.59 | 1.07 | 0.59 | 1.08 |
| 34 | 0.65 | 1.10 | 0.64 | 1.10 | 0.62 | 1.09 | 0.61 | 1.10 | 0.61 | 1.11 |
| 35 | 0.67 | 1.12 | 0.66 | 1.11 | 0.65 | 1.12 | 0.64 | 1.13 | 0.64 | 1.14 |
| 36 | 0.70 | 1.13 | 0.69 | 1.13 | 0.68 | 1.14 | 0.67 | 1.15 | 0.66 | 1.17 |
| 37 | 0.72 | 1.14 | 0.71 | 1.14 | 0.70 | 1.16 | 0.69 | 1.18 | 0.69 | 1.20 |
| 38 | 0.75 | 1.16 | 0.74 | 1.16 | 0.73 | 1.19 | 0.72 | 1.21 | 0.72 | 1.23 |
| 39 | 0.78 | 1.18 | 0.76 | 1.19 | 0.75 | 1.22 | 0.75 | 1.24 | 0.75 | 1.27 |
| 40 | 0.80 | 1.20 | 0.79 | 1.21 | 0.78 | 1.25 | 0.78 | 1.28 | 0.77 | 1.31 |
| 41 | 0.83 | 1.22 | 0.82 | 1.24 | 0.81 | 1.28 | 0.81 | 1.31 | 0.80 | 1.34 |
| 42 | 0.85 | 1.24 | 0.85 | 1.27 | 0.84 | 1.31 | 0.83 | 1.34 | 0.83 | 1.37 |
| 43 | 0.88 | 1.27 | 0.88 | 1.29 | 0.87 | 1.34 | 0.86 | 1.37 | 0.85 | 1.40 |
| 44 | 0.92 | 1.29 | 0.91 | 1.31 | 0.90 | 1.36 | 0.89 | 1.39 | 0.88 | 1.42 |
| 45 | 0.96 | 1.33 | 0.94 | 1.35 | 0.93 | 1.39 | 0.92 | 1.42 | 0.92 | 1.44 |
| 46 | 1.00 | 1.37 | 0.98 | 1.39 | 0.96 | 1.42 | 0.96 | 1.45 | 0.96 | 1.46 |
| 47 | 1.05 | 1.42 | 1.02 | 1.44 | 1.01 | 1.46 | 1.01 | 1.49 | 1.01 | 1.50 |
| 48 | 1.11 | 1.48 | 1.08 | 1.49 | 1.07 | 1.51 | 1.07 | 1.54 | 1.07 | 1.54 |
| 49 | 1.17 | 1.54 | 1.16 | 1.55 | 1.14 | 1.57 | 1.14 | 1.60 | 1.14 | 1.59 |
| 50 | 1.24 | 1.59 | 1.24 | 1.61 | 1.22 | 1.64 | 1.22 | 1.66 | 1.21 | 1.65 |
| 51 | 1.30 | 1.64 | 1.32 | 1.66 | 1.29 | 1.70 | 1.29 | 1.71 | 1.28 | 1.70 |
| 52 | 1.37 | 1.68 | 1.39 | 1.70 | 1.37 | 1.74 | 1.36 | 1.75 | 1.34 | 1.74 |
| 53 | 1.43 | 1.71 | 1.46 | 1.74 | 1.43 | 1.77 | 1.42 | 1.78 | 1.40 | 1.77 |
| 54 | 1.50 | 1.74 | 1.52 | 1.77 | 1.50 | 1.79 | 1.48 | 1.80 | 1.46 | 1.80 |
| 55 | 1.57 | 1.77 | 1.59 | 1.80 | 1.56 | 1.82 | 1.55 | 1.82 | 1.53 | 1.82 |
| 56 | 1.64 | 1.80 | 1.67 | 1.83 | 1.64 | 1.86 | 1.62 | 1.85 | 1.60 | 1.85 |
| 57 | 1.72 | 1.85 | 1.75 | 1.86 | 1.71 | 1.90 | 1.70 | 1.88 | 1.68 | 1.88 |
| 58 | 1.80 | 1.90 | 1.83 | 1.90 | 1.80 | 1.94 | 1.79 | 1.93 | 1.77 | 1.92 |
| 59 | 1.89 | 1.96 | 1.90 | 1.95 | 1.89 | 2.00 | 1.88 | 1.98 | 1.86 | 1.96 |
| 60 | 1.97 | 2.01 | 1.98 | 1.99 | 1.98 | 2.06 | 1.97 | 2.04 | 1.96 | 2.02 |
| 61 | 2.05 | 2.07 | 2.07 | 2.05 | 2.08 | 2.12 | 2.06 | 2.11 | 2.05 | 2.08 |
| 62 | 2.12 | 2.12 | 2.16 | 2.11 | 2.18 | 2.19 | 2.15 | 2.18 | 2.14 | 2.14 |
| 63 | 2.18 | 2.17 | 2.27 | 2.19 | 2.27 | 2.28 | 2.24 | 2.24 | 2.23 | 2.21 |
| 64 | 2.24 | 2.21 | 2.39 | 2.29 | 2.36 | 2.37 | 2.34 | 2.30 | 2.31 | 2.28 |

Chart 8: Professional Costs by Age and Experience Years

| Age | 2002-03 | | 2004-05 | | 2006-07 | | 2008-09 | | 2010 | |
|-----|---------|--------|---------|--------|---------|--------|---------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 0 | 2.89 | 2.48 | 2.75 | 2.42 | 2.79 | 2.42 | 2.88 | 2.52 | 2.85 | 2.51 |
| 1 | 1.91 | 1.64 | 1.82 | 1.59 | 1.83 | 1.58 | 1.85 | 1.62 | 1.90 | 1.67 |
| 2 | 1.20 | 1.04 | 1.15 | 0.99 | 1.13 | 0.98 | 1.12 | 0.98 | 1.21 | 1.06 |
| 3 | 0.74 | 0.64 | 0.72 | 0.60 | 0.70 | 0.60 | 0.69 | 0.59 | 0.77 | 0.66 |
| 4 | 0.49 | 0.42 | 0.49 | 0.40 | 0.49 | 0.42 | 0.50 | 0.42 | 0.54 | 0.45 |
| 5 | 0.39 | 0.33 | 0.40 | 0.32 | 0.42 | 0.35 | 0.45 | 0.37 | 0.44 | 0.37 |
| 6 | 0.36 | 0.31 | 0.38 | 0.31 | 0.41 | 0.34 | 0.45 | 0.37 | 0.43 | 0.35 |
| 7 | 0.38 | 0.32 | 0.39 | 0.32 | 0.42 | 0.35 | 0.45 | 0.38 | 0.43 | 0.36 |
| 8 | 0.39 | 0.33 | 0.40 | 0.33 | 0.42 | 0.36 | 0.45 | 0.38 | 0.44 | 0.37 |
| 9 | 0.40 | 0.34 | 0.40 | 0.34 | 0.42 | 0.36 | 0.44 | 0.38 | 0.44 | 0.38 |
| 10 | 0.41 | 0.35 | 0.40 | 0.34 | 0.41 | 0.36 | 0.44 | 0.39 | 0.45 | 0.40 |
| 11 | 0.42 | 0.36 | 0.40 | 0.35 | 0.42 | 0.37 | 0.44 | 0.40 | 0.45 | 0.42 |
| 12 | 0.43 | 0.38 | 0.42 | 0.36 | 0.43 | 0.39 | 0.45 | 0.43 | 0.47 | 0.44 |
| 13 | 0.45 | 0.40 | 0.44 | 0.39 | 0.45 | 0.43 | 0.47 | 0.47 | 0.49 | 0.48 |
| 14 | 0.47 | 0.44 | 0.46 | 0.43 | 0.48 | 0.48 | 0.50 | 0.52 | 0.51 | 0.52 |
| 15 | 0.49 | 0.48 | 0.49 | 0.48 | 0.51 | 0.54 | 0.53 | 0.57 | 0.53 | 0.56 |
| 16 | 0.49 | 0.52 | 0.50 | 0.52 | 0.52 | 0.58 | 0.54 | 0.61 | 0.54 | 0.60 |
| 17 | 0.48 | 0.56 | 0.50 | 0.56 | 0.51 | 0.62 | 0.53 | 0.64 | 0.53 | 0.62 |
| 18 | 0.46 | 0.59 | 0.48 | 0.59 | 0.49 | 0.63 | 0.50 | 0.64 | 0.50 | 0.62 |
| 19 | 0.43 | 0.61 | 0.45 | 0.62 | 0.45 | 0.63 | 0.45 | 0.62 | 0.46 | 0.61 |
| 20 | 0.40 | 0.65 | 0.42 | 0.64 | 0.41 | 0.63 | 0.40 | 0.61 | 0.42 | 0.61 |
| 21 | 0.38 | 0.70 | 0.39 | 0.69 | 0.38 | 0.65 | 0.37 | 0.62 | 0.38 | 0.61 |
| 22 | 0.37 | 0.77 | 0.38 | 0.74 | 0.36 | 0.69 | 0.35 | 0.66 | 0.36 | 0.65 |
| 23 | 0.38 | 0.85 | 0.38 | 0.82 | 0.36 | 0.75 | 0.35 | 0.72 | 0.36 | 0.70 |
| 24 | 0.40 | 0.95 | 0.39 | 0.90 | 0.37 | 0.82 | 0.36 | 0.80 | 0.36 | 0.78 |
| 25 | 0.42 | 1.04 | 0.42 | 1.00 | 0.39 | 0.91 | 0.38 | 0.88 | 0.38 | 0.86 |
| 26 | 0.45 | 1.14 | 0.44 | 1.08 | 0.41 | 0.99 | 0.40 | 0.97 | 0.40 | 0.95 |
| 27 | 0.48 | 1.22 | 0.46 | 1.17 | 0.44 | 1.07 | 0.42 | 1.05 | 0.42 | 1.04 |
| 28 | 0.50 | 1.28 | 0.49 | 1.23 | 0.46 | 1.14 | 0.45 | 1.13 | 0.45 | 1.12 |
| 29 | 0.53 | 1.34 | 0.51 | 1.29 | 0.48 | 1.21 | 0.47 | 1.20 | 0.47 | 1.20 |
| 30 | 0.55 | 1.38 | 0.53 | 1.33 | 0.50 | 1.26 | 0.50 | 1.26 | 0.50 | 1.26 |
| 31 | 0.57 | 1.41 | 0.55 | 1.35 | 0.53 | 1.30 | 0.52 | 1.30 | 0.52 | 1.31 |
| 32 | 0.59 | 1.42 | 0.57 | 1.37 | 0.55 | 1.32 | 0.54 | 1.33 | 0.55 | 1.34 |
| 33 | 0.60 | 1.43 | 0.60 | 1.37 | 0.57 | 1.33 | 0.57 | 1.34 | 0.57 | 1.36 |
| 34 | 0.62 | 1.42 | 0.61 | 1.37 | 0.59 | 1.33 | 0.59 | 1.35 | 0.59 | 1.36 |
| 35 | 0.64 | 1.40 | 0.63 | 1.36 | 0.61 | 1.33 | 0.61 | 1.34 | 0.61 | 1.36 |
| 36 | 0.66 | 1.38 | 0.65 | 1.35 | 0.64 | 1.32 | 0.64 | 1.33 | 0.64 | 1.35 |
| 37 | 0.68 | 1.35 | 0.67 | 1.33 | 0.66 | 1.30 | 0.66 | 1.32 | 0.66 | 1.34 |
| 38 | 0.70 | 1.32 | 0.69 | 1.31 | 0.68 | 1.29 | 0.68 | 1.31 | 0.68 | 1.33 |
| 39 | 0.72 | 1.30 | 0.71 | 1.29 | 0.70 | 1.28 | 0.71 | 1.31 | 0.71 | 1.32 |
| 40 | 0.74 | 1.29 | 0.73 | 1.28 | 0.73 | 1.28 | 0.73 | 1.31 | 0.74 | 1.32 |
| 41 | 0.77 | 1.28 | 0.76 | 1.27 | 0.76 | 1.28 | 0.76 | 1.31 | 0.76 | 1.32 |
| 42 | 0.79 | 1.28 | 0.78 | 1.27 | 0.78 | 1.29 | 0.78 | 1.31 | 0.78 | 1.33 |
| 43 | 0.82 | 1.28 | 0.81 | 1.28 | 0.80 | 1.30 | 0.80 | 1.32 | 0.81 | 1.33 |
| 44 | 0.84 | 1.30 | 0.84 | 1.29 | 0.83 | 1.31 | 0.83 | 1.33 | 0.83 | 1.34 |
| 45 | 0.87 | 1.32 | 0.87 | 1.31 | 0.86 | 1.33 | 0.85 | 1.34 | 0.86 | 1.35 |
| 46 | 0.90 | 1.35 | 0.90 | 1.34 | 0.89 | 1.35 | 0.89 | 1.36 | 0.89 | 1.36 |
| 47 | 0.94 | 1.39 | 0.93 | 1.38 | 0.92 | 1.38 | 0.92 | 1.39 | 0.92 | 1.39 |
| 48 | 0.98 | 1.43 | 0.98 | 1.42 | 0.97 | 1.43 | 0.97 | 1.43 | 0.96 | 1.42 |
| 49 | 1.02 | 1.47 | 1.03 | 1.47 | 1.02 | 1.47 | 1.02 | 1.48 | 1.01 | 1.46 |
| 50 | 1.07 | 1.50 | 1.08 | 1.52 | 1.08 | 1.52 | 1.07 | 1.52 | 1.06 | 1.50 |
| 51 | 1.12 | 1.54 | 1.13 | 1.56 | 1.14 | 1.57 | 1.13 | 1.56 | 1.11 | 1.54 |
| 52 | 1.16 | 1.57 | 1.19 | 1.60 | 1.20 | 1.61 | 1.18 | 1.60 | 1.17 | 1.58 |
| 53 | 1.21 | 1.59 | 1.24 | 1.63 | 1.25 | 1.64 | 1.23 | 1.63 | 1.22 | 1.61 |
| 54 | 1.26 | 1.62 | 1.29 | 1.66 | 1.30 | 1.67 | 1.28 | 1.66 | 1.27 | 1.64 |
| 55 | 1.32 | 1.65 | 1.34 | 1.69 | 1.35 | 1.70 | 1.34 | 1.68 | 1.33 | 1.67 |
| 56 | 1.38 | 1.69 | 1.40 | 1.72 | 1.41 | 1.73 | 1.39 | 1.71 | 1.39 | 1.70 |
| 57 | 1.44 | 1.72 | 1.46 | 1.76 | 1.48 | 1.77 | 1.46 | 1.74 | 1.45 | 1.73 |
| 58 | 1.50 | 1.76 | 1.53 | 1.80 | 1.55 | 1.81 | 1.52 | 1.77 | 1.51 | 1.76 |
| 59 | 1.57 | 1.79 | 1.60 | 1.84 | 1.63 | 1.86 | 1.59 | 1.82 | 1.58 | 1.80 |
| 60 | 1.64 | 1.83 | 1.68 | 1.88 | 1.71 | 1.92 | 1.66 | 1.87 | 1.65 | 1.85 |
| 61 | 1.70 | 1.86 | 1.76 | 1.93 | 1.80 | 1.98 | 1.74 | 1.93 | 1.73 | 1.90 |
| 62 | 1.76 | 1.89 | 1.84 | 1.98 | 1.88 | 2.03 | 1.82 | 2.00 | 1.81 | 1.96 |
| 63 | 1.81 | 1.92 | 1.92 | 2.03 | 1.97 | 2.09 | 1.92 | 2.07 | 1.90 | 2.03 |
| 64 | 1.85 | 1.94 | 2.01 | 2.08 | 2.06 | 2.15 | 2.02 | 2.13 | 2.00 | 2.10 |

Chart 9: Pharmacy Costs by Age and Experience Years

| Age | 2002-03 | | 2004-05 | | 2006-07 | | 2008-09 | | 2010 | |
|-----|---------|--------|---------|--------|---------|--------|---------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 0 | 0.26 | 0.19 | 0.25 | 0.18 | 0.26 | 0.20 | 0.28 | 0.21 | 0.26 | 0.20 |
| 1 | 0.27 | 0.21 | 0.27 | 0.21 | 0.28 | 0.21 | 0.27 | 0.21 | 0.25 | 0.20 |
| 2 | 0.27 | 0.22 | 0.28 | 0.22 | 0.29 | 0.22 | 0.26 | 0.21 | 0.25 | 0.19 |
| 3 | 0.28 | 0.22 | 0.29 | 0.23 | 0.30 | 0.23 | 0.26 | 0.21 | 0.25 | 0.20 |
| 4 | 0.28 | 0.22 | 0.29 | 0.23 | 0.31 | 0.24 | 0.27 | 0.21 | 0.26 | 0.20 |
| 5 | 0.29 | 0.23 | 0.30 | 0.23 | 0.32 | 0.25 | 0.29 | 0.22 | 0.29 | 0.21 |
| 6 | 0.30 | 0.23 | 0.32 | 0.24 | 0.34 | 0.25 | 0.32 | 0.23 | 0.32 | 0.22 |
| 7 | 0.31 | 0.23 | 0.33 | 0.24 | 0.37 | 0.26 | 0.35 | 0.24 | 0.35 | 0.24 |
| 8 | 0.33 | 0.24 | 0.35 | 0.25 | 0.39 | 0.27 | 0.38 | 0.26 | 0.39 | 0.25 |
| 9 | 0.35 | 0.24 | 0.38 | 0.25 | 0.41 | 0.28 | 0.41 | 0.27 | 0.42 | 0.27 |
| 10 | 0.37 | 0.25 | 0.40 | 0.26 | 0.43 | 0.28 | 0.44 | 0.28 | 0.46 | 0.29 |
| 11 | 0.39 | 0.27 | 0.43 | 0.28 | 0.46 | 0.30 | 0.46 | 0.30 | 0.49 | 0.31 |
| 12 | 0.43 | 0.29 | 0.47 | 0.31 | 0.49 | 0.31 | 0.50 | 0.32 | 0.54 | 0.34 |
| 13 | 0.46 | 0.32 | 0.51 | 0.34 | 0.52 | 0.34 | 0.54 | 0.36 | 0.59 | 0.38 |
| 14 | 0.49 | 0.36 | 0.55 | 0.37 | 0.56 | 0.38 | 0.59 | 0.40 | 0.64 | 0.43 |
| 15 | 0.50 | 0.40 | 0.57 | 0.41 | 0.59 | 0.42 | 0.63 | 0.45 | 0.67 | 0.48 |
| 16 | 0.49 | 0.43 | 0.56 | 0.45 | 0.58 | 0.46 | 0.63 | 0.50 | 0.68 | 0.53 |
| 17 | 0.46 | 0.46 | 0.52 | 0.49 | 0.55 | 0.50 | 0.60 | 0.53 | 0.65 | 0.56 |
| 18 | 0.41 | 0.48 | 0.46 | 0.51 | 0.49 | 0.52 | 0.53 | 0.55 | 0.58 | 0.58 |
| 19 | 0.36 | 0.49 | 0.39 | 0.53 | 0.41 | 0.54 | 0.45 | 0.56 | 0.51 | 0.59 |
| 20 | 0.31 | 0.51 | 0.33 | 0.54 | 0.35 | 0.54 | 0.38 | 0.57 | 0.44 | 0.59 |
| 21 | 0.28 | 0.52 | 0.29 | 0.55 | 0.30 | 0.55 | 0.33 | 0.57 | 0.39 | 0.59 |
| 22 | 0.26 | 0.55 | 0.26 | 0.57 | 0.28 | 0.56 | 0.31 | 0.57 | 0.35 | 0.59 |
| 23 | 0.26 | 0.58 | 0.26 | 0.59 | 0.27 | 0.58 | 0.30 | 0.59 | 0.34 | 0.60 |
| 24 | 0.27 | 0.62 | 0.27 | 0.62 | 0.28 | 0.60 | 0.31 | 0.61 | 0.34 | 0.61 |
| 25 | 0.28 | 0.66 | 0.28 | 0.65 | 0.29 | 0.63 | 0.32 | 0.63 | 0.34 | 0.63 |
| 26 | 0.31 | 0.70 | 0.31 | 0.68 | 0.31 | 0.67 | 0.34 | 0.66 | 0.35 | 0.65 |
| 27 | 0.33 | 0.73 | 0.33 | 0.71 | 0.34 | 0.70 | 0.35 | 0.69 | 0.37 | 0.67 |
| 28 | 0.36 | 0.76 | 0.36 | 0.74 | 0.36 | 0.73 | 0.38 | 0.71 | 0.39 | 0.70 |
| 29 | 0.39 | 0.78 | 0.38 | 0.76 | 0.39 | 0.75 | 0.40 | 0.74 | 0.42 | 0.72 |
| 30 | 0.42 | 0.81 | 0.41 | 0.79 | 0.41 | 0.78 | 0.43 | 0.76 | 0.44 | 0.75 |
| 31 | 0.45 | 0.83 | 0.43 | 0.81 | 0.44 | 0.80 | 0.46 | 0.78 | 0.47 | 0.77 |
| 32 | 0.49 | 0.86 | 0.47 | 0.84 | 0.48 | 0.83 | 0.49 | 0.81 | 0.50 | 0.80 |
| 33 | 0.53 | 0.89 | 0.50 | 0.87 | 0.51 | 0.86 | 0.52 | 0.84 | 0.53 | 0.83 |
| 34 | 0.57 | 0.91 | 0.54 | 0.90 | 0.55 | 0.90 | 0.55 | 0.87 | 0.57 | 0.86 |
| 35 | 0.61 | 0.94 | 0.58 | 0.93 | 0.59 | 0.93 | 0.59 | 0.91 | 0.60 | 0.89 |
| 36 | 0.65 | 0.98 | 0.62 | 0.96 | 0.63 | 0.96 | 0.63 | 0.94 | 0.64 | 0.93 |
| 37 | 0.69 | 1.01 | 0.67 | 0.99 | 0.67 | 0.99 | 0.67 | 0.98 | 0.68 | 0.96 |
| 38 | 0.74 | 1.04 | 0.71 | 1.02 | 0.72 | 1.03 | 0.72 | 1.02 | 0.73 | 1.00 |
| 39 | 0.78 | 1.08 | 0.76 | 1.05 | 0.77 | 1.06 | 0.77 | 1.06 | 0.77 | 1.04 |
| 40 | 0.82 | 1.12 | 0.81 | 1.09 | 0.82 | 1.09 | 0.82 | 1.09 | 0.83 | 1.08 |
| 41 | 0.87 | 1.16 | 0.86 | 1.13 | 0.87 | 1.12 | 0.87 | 1.12 | 0.88 | 1.11 |
| 42 | 0.91 | 1.20 | 0.90 | 1.17 | 0.92 | 1.16 | 0.92 | 1.15 | 0.93 | 1.15 |
| 43 | 0.96 | 1.24 | 0.95 | 1.21 | 0.97 | 1.20 | 0.97 | 1.19 | 0.99 | 1.18 |
| 44 | 1.01 | 1.30 | 1.00 | 1.27 | 1.03 | 1.25 | 1.03 | 1.23 | 1.04 | 1.21 |
| 45 | 1.07 | 1.36 | 1.05 | 1.32 | 1.08 | 1.30 | 1.08 | 1.27 | 1.10 | 1.25 |
| 46 | 1.14 | 1.43 | 1.11 | 1.39 | 1.13 | 1.36 | 1.14 | 1.33 | 1.15 | 1.29 |
| 47 | 1.21 | 1.50 | 1.17 | 1.46 | 1.19 | 1.42 | 1.19 | 1.39 | 1.21 | 1.34 |
| 48 | 1.27 | 1.58 | 1.24 | 1.54 | 1.25 | 1.49 | 1.25 | 1.45 | 1.27 | 1.40 |
| 49 | 1.34 | 1.67 | 1.32 | 1.62 | 1.32 | 1.57 | 1.31 | 1.52 | 1.34 | 1.47 |
| 50 | 1.41 | 1.75 | 1.39 | 1.71 | 1.39 | 1.65 | 1.38 | 1.59 | 1.41 | 1.54 |
| 51 | 1.48 | 1.83 | 1.47 | 1.79 | 1.47 | 1.73 | 1.46 | 1.67 | 1.48 | 1.62 |
| 52 | 1.55 | 1.92 | 1.54 | 1.87 | 1.55 | 1.82 | 1.54 | 1.76 | 1.56 | 1.70 |
| 53 | 1.62 | 2.00 | 1.61 | 1.95 | 1.64 | 1.90 | 1.63 | 1.85 | 1.64 | 1.78 |
| 54 | 1.69 | 2.09 | 1.68 | 2.03 | 1.72 | 1.98 | 1.72 | 1.94 | 1.73 | 1.87 |
| 55 | 1.76 | 2.17 | 1.75 | 2.11 | 1.79 | 2.05 | 1.81 | 2.03 | 1.82 | 1.96 |
| 56 | 1.83 | 2.25 | 1.83 | 2.19 | 1.87 | 2.13 | 1.90 | 2.11 | 1.91 | 2.05 |
| 57 | 1.91 | 2.31 | 1.91 | 2.27 | 1.94 | 2.20 | 1.98 | 2.19 | 1.99 | 2.13 |
| 58 | 1.99 | 2.38 | 1.99 | 2.35 | 2.02 | 2.28 | 2.06 | 2.26 | 2.08 | 2.22 |
| 59 | 2.07 | 2.44 | 2.08 | 2.43 | 2.10 | 2.36 | 2.14 | 2.35 | 2.17 | 2.30 |
| 60 | 2.15 | 2.49 | 2.17 | 2.50 | 2.19 | 2.45 | 2.23 | 2.44 | 2.26 | 2.38 |
| 61 | 2.22 | 2.54 | 2.27 | 2.57 | 2.29 | 2.52 | 2.33 | 2.53 | 2.36 | 2.47 |
| 62 | 2.29 | 2.58 | 2.36 | 2.65 | 2.40 | 2.60 | 2.44 | 2.63 | 2.47 | 2.57 |
| 63 | 2.35 | 2.60 | 2.44 | 2.73 | 2.52 | 2.68 | 2.57 | 2.73 | 2.59 | 2.67 |
| 64 | 2.39 | 2.62 | 2.53 | 2.80 | 2.65 | 2.75 | 2.71 | 2.83 | 2.72 | 2.78 |

Chart 10: Medicare Total Allowed Charge by Age 2006 through 2010

| Age | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | |
|-----|------|--------|------|--------|------|--------|------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 0.68 | 0.65 | 0.71 | 0.67 | 0.69 | 0.66 | 0.69 | 0.67 | 0.69 | 0.67 |
| 66 | 0.70 | 0.67 | 0.72 | 0.68 | 0.71 | 0.68 | 0.71 | 0.69 | 0.71 | 0.69 |
| 67 | 0.72 | 0.69 | 0.74 | 0.70 | 0.73 | 0.70 | 0.73 | 0.70 | 0.73 | 0.71 |
| 68 | 0.75 | 0.71 | 0.76 | 0.72 | 0.76 | 0.72 | 0.75 | 0.73 | 0.76 | 0.73 |
| 69 | 0.78 | 0.74 | 0.78 | 0.74 | 0.78 | 0.75 | 0.78 | 0.75 | 0.79 | 0.76 |
| 70 | 0.82 | 0.77 | 0.82 | 0.77 | 0.81 | 0.78 | 0.81 | 0.78 | 0.82 | 0.78 |
| 71 | 0.86 | 0.80 | 0.85 | 0.80 | 0.85 | 0.81 | 0.84 | 0.81 | 0.85 | 0.81 |
| 72 | 0.90 | 0.83 | 0.89 | 0.84 | 0.88 | 0.84 | 0.88 | 0.84 | 0.89 | 0.84 |
| 73 | 0.95 | 0.87 | 0.94 | 0.87 | 0.93 | 0.87 | 0.92 | 0.88 | 0.92 | 0.88 |
| 74 | 0.99 | 0.90 | 0.98 | 0.90 | 0.97 | 0.90 | 0.96 | 0.91 | 0.96 | 0.91 |
| 75 | 1.03 | 0.94 | 1.02 | 0.94 | 1.01 | 0.93 | 1.00 | 0.94 | 1.00 | 0.94 |
| 76 | 1.08 | 0.97 | 1.07 | 0.97 | 1.06 | 0.97 | 1.04 | 0.98 | 1.04 | 0.97 |
| 77 | 1.12 | 1.01 | 1.11 | 1.01 | 1.10 | 1.00 | 1.08 | 1.01 | 1.08 | 1.01 |
| 78 | 1.16 | 1.05 | 1.15 | 1.04 | 1.14 | 1.04 | 1.12 | 1.04 | 1.12 | 1.04 |
| 79 | 1.20 | 1.08 | 1.19 | 1.08 | 1.18 | 1.07 | 1.16 | 1.08 | 1.16 | 1.08 |
| 80 | 1.24 | 1.12 | 1.23 | 1.11 | 1.22 | 1.11 | 1.20 | 1.12 | 1.20 | 1.12 |
| 81 | 1.28 | 1.16 | 1.27 | 1.15 | 1.26 | 1.15 | 1.25 | 1.16 | 1.25 | 1.16 |
| 82 | 1.32 | 1.19 | 1.31 | 1.19 | 1.30 | 1.19 | 1.29 | 1.19 | 1.29 | 1.20 |
| 83 | 1.35 | 1.23 | 1.34 | 1.22 | 1.34 | 1.23 | 1.33 | 1.23 | 1.33 | 1.24 |
| 84 | 1.39 | 1.27 | 1.38 | 1.26 | 1.38 | 1.28 | 1.38 | 1.27 | 1.37 | 1.28 |
| 85 | 1.44 | 1.31 | 1.42 | 1.30 | 1.42 | 1.32 | 1.42 | 1.31 | 1.42 | 1.32 |
| 86 | 1.48 | 1.34 | 1.46 | 1.34 | 1.46 | 1.36 | 1.47 | 1.36 | 1.46 | 1.36 |
| 87 | 1.52 | 1.38 | 1.50 | 1.38 | 1.50 | 1.40 | 1.51 | 1.40 | 1.50 | 1.40 |
| 88 | 1.56 | 1.42 | 1.54 | 1.42 | 1.55 | 1.44 | 1.55 | 1.44 | 1.54 | 1.44 |
| 89 | 1.60 | 1.45 | 1.58 | 1.46 | 1.59 | 1.48 | 1.59 | 1.48 | 1.59 | 1.47 |
| 90 | 1.64 | 1.49 | 1.62 | 1.50 | 1.63 | 1.52 | 1.63 | 1.52 | 1.63 | 1.51 |
| 91 | 1.68 | 1.51 | 1.66 | 1.53 | 1.67 | 1.55 | 1.67 | 1.55 | 1.67 | 1.53 |
| 92 | 1.71 | 1.54 | 1.70 | 1.55 | 1.71 | 1.57 | 1.70 | 1.58 | 1.70 | 1.56 |
| 93 | 1.74 | 1.55 | 1.73 | 1.56 | 1.74 | 1.59 | 1.73 | 1.60 | 1.74 | 1.57 |
| 94 | 1.76 | 1.55 | 1.76 | 1.56 | 1.77 | 1.59 | 1.75 | 1.61 | 1.77 | 1.58 |
| 95 | 1.78 | 1.54 | 1.79 | 1.55 | 1.80 | 1.58 | 1.77 | 1.60 | 1.80 | 1.57 |
| 96 | 1.79 | 1.51 | 1.80 | 1.52 | 1.82 | 1.56 | 1.78 | 1.58 | 1.83 | 1.55 |
| 97 | 1.79 | 1.46 | 1.81 | 1.47 | 1.84 | 1.52 | 1.79 | 1.55 | 1.85 | 1.51 |
| 98 | 1.78 | 1.40 | 1.82 | 1.41 | 1.85 | 1.46 | 1.78 | 1.50 | 1.87 | 1.47 |

Chart 11: Medicare Net Allowed Amount by Age 2006 through 2010

| Age | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | |
|-----|------|--------|------|--------|------|--------|------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 0.88 | 0.78 | 0.97 | 0.86 | 1.03 | 0.83 | 0.98 | 0.86 | 0.99 | 0.89 |
| 66 | 0.87 | 0.78 | 0.96 | 0.85 | 1.00 | 0.84 | 0.97 | 0.85 | 0.97 | 0.87 |
| 67 | 0.87 | 0.78 | 0.95 | 0.84 | 0.98 | 0.84 | 0.96 | 0.84 | 0.95 | 0.86 |
| 68 | 0.87 | 0.78 | 0.95 | 0.84 | 0.97 | 0.84 | 0.95 | 0.84 | 0.95 | 0.85 |
| 69 | 0.88 | 0.79 | 0.94 | 0.84 | 0.96 | 0.85 | 0.95 | 0.85 | 0.95 | 0.85 |
| 70 | 0.90 | 0.80 | 0.95 | 0.85 | 0.96 | 0.86 | 0.95 | 0.86 | 0.95 | 0.86 |
| 71 | 0.91 | 0.82 | 0.96 | 0.86 | 0.96 | 0.86 | 0.96 | 0.87 | 0.96 | 0.87 |
| 72 | 0.93 | 0.84 | 0.97 | 0.87 | 0.97 | 0.87 | 0.97 | 0.88 | 0.97 | 0.88 |
| 73 | 0.95 | 0.86 | 0.99 | 0.89 | 0.98 | 0.88 | 0.98 | 0.90 | 0.98 | 0.89 |
| 74 | 0.98 | 0.88 | 1.00 | 0.90 | 1.00 | 0.90 | 1.00 | 0.91 | 1.00 | 0.91 |
| 75 | 1.00 | 0.91 | 1.02 | 0.92 | 1.01 | 0.91 | 1.02 | 0.93 | 1.01 | 0.93 |
| 76 | 1.03 | 0.94 | 1.05 | 0.94 | 1.03 | 0.93 | 1.04 | 0.94 | 1.02 | 0.95 |
| 77 | 1.05 | 0.97 | 1.07 | 0.96 | 1.05 | 0.95 | 1.05 | 0.96 | 1.04 | 0.97 |
| 78 | 1.08 | 1.00 | 1.09 | 0.98 | 1.07 | 0.97 | 1.07 | 0.98 | 1.06 | 1.00 |
| 79 | 1.10 | 1.03 | 1.11 | 1.00 | 1.09 | 0.99 | 1.09 | 1.00 | 1.07 | 1.02 |
| 80 | 1.13 | 1.06 | 1.12 | 1.02 | 1.11 | 1.01 | 1.10 | 1.02 | 1.09 | 1.04 |
| 81 | 1.16 | 1.09 | 1.14 | 1.04 | 1.13 | 1.03 | 1.12 | 1.04 | 1.11 | 1.05 |
| 82 | 1.19 | 1.13 | 1.16 | 1.06 | 1.15 | 1.06 | 1.14 | 1.06 | 1.14 | 1.07 |
| 83 | 1.22 | 1.16 | 1.18 | 1.09 | 1.17 | 1.08 | 1.16 | 1.08 | 1.16 | 1.09 |
| 84 | 1.25 | 1.20 | 1.20 | 1.11 | 1.19 | 1.11 | 1.18 | 1.11 | 1.18 | 1.11 |
| 85 | 1.29 | 1.24 | 1.22 | 1.13 | 1.22 | 1.13 | 1.20 | 1.13 | 1.20 | 1.12 |
| 86 | 1.33 | 1.28 | 1.24 | 1.16 | 1.24 | 1.16 | 1.23 | 1.16 | 1.23 | 1.14 |
| 87 | 1.37 | 1.32 | 1.26 | 1.18 | 1.26 | 1.18 | 1.25 | 1.18 | 1.25 | 1.16 |
| 88 | 1.41 | 1.36 | 1.28 | 1.21 | 1.29 | 1.20 | 1.27 | 1.20 | 1.27 | 1.18 |
| 89 | 1.45 | 1.39 | 1.30 | 1.23 | 1.31 | 1.23 | 1.29 | 1.23 | 1.29 | 1.20 |
| 90 | 1.49 | 1.42 | 1.32 | 1.25 | 1.32 | 1.24 | 1.31 | 1.25 | 1.31 | 1.21 |
| 91 | 1.52 | 1.45 | 1.34 | 1.26 | 1.34 | 1.26 | 1.33 | 1.26 | 1.32 | 1.23 |
| 92 | 1.54 | 1.46 | 1.36 | 1.26 | 1.35 | 1.26 | 1.35 | 1.27 | 1.34 | 1.23 |
| 93 | 1.56 | 1.46 | 1.37 | 1.26 | 1.36 | 1.26 | 1.36 | 1.27 | 1.35 | 1.23 |
| 94 | 1.57 | 1.45 | 1.38 | 1.24 | 1.37 | 1.25 | 1.37 | 1.26 | 1.36 | 1.21 |
| 95 | 1.56 | 1.42 | 1.39 | 1.21 | 1.38 | 1.23 | 1.38 | 1.24 | 1.36 | 1.19 |
| 96 | 1.55 | 1.37 | 1.39 | 1.17 | 1.38 | 1.19 | 1.38 | 1.21 | 1.36 | 1.15 |
| 97 | 1.53 | 1.31 | 1.38 | 1.11 | 1.37 | 1.14 | 1.38 | 1.16 | 1.36 | 1.10 |
| 98 | 1.49 | 1.22 | 1.36 | 1.04 | 1.36 | 1.08 | 1.37 | 1.10 | 1.36 | 1.04 |

Chart 12: Inpatient Facility Costs by Age and Experience Year—Total Allowed Charge

| Age | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | |
|-----|------|--------|------|--------|------|--------|------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 0.64 | 0.51 | 0.68 | 0.54 | 0.65 | 0.53 | 0.66 | 0.55 | 0.66 | 0.55 |
| 66 | 0.65 | 0.53 | 0.68 | 0.54 | 0.66 | 0.54 | 0.67 | 0.55 | 0.67 | 0.56 |
| 67 | 0.66 | 0.54 | 0.68 | 0.55 | 0.67 | 0.56 | 0.68 | 0.57 | 0.68 | 0.57 |
| 68 | 0.69 | 0.57 | 0.69 | 0.57 | 0.69 | 0.58 | 0.69 | 0.58 | 0.70 | 0.59 |
| 69 | 0.72 | 0.59 | 0.71 | 0.60 | 0.72 | 0.61 | 0.71 | 0.61 | 0.72 | 0.62 |
| 70 | 0.75 | 0.63 | 0.74 | 0.63 | 0.74 | 0.64 | 0.74 | 0.64 | 0.75 | 0.65 |
| 71 | 0.79 | 0.66 | 0.78 | 0.67 | 0.78 | 0.67 | 0.77 | 0.68 | 0.78 | 0.69 |
| 72 | 0.84 | 0.71 | 0.83 | 0.71 | 0.82 | 0.71 | 0.81 | 0.72 | 0.82 | 0.72 |
| 73 | 0.89 | 0.75 | 0.88 | 0.76 | 0.86 | 0.75 | 0.85 | 0.76 | 0.86 | 0.76 |
| 74 | 0.94 | 0.80 | 0.93 | 0.80 | 0.91 | 0.79 | 0.90 | 0.81 | 0.90 | 0.80 |
| 75 | 0.99 | 0.85 | 0.98 | 0.85 | 0.96 | 0.84 | 0.95 | 0.86 | 0.95 | 0.85 |
| 76 | 1.04 | 0.90 | 1.03 | 0.90 | 1.02 | 0.89 | 1.00 | 0.91 | 1.00 | 0.90 |
| 77 | 1.10 | 0.96 | 1.08 | 0.96 | 1.08 | 0.94 | 1.06 | 0.96 | 1.05 | 0.95 |
| 78 | 1.15 | 1.02 | 1.14 | 1.01 | 1.13 | 1.00 | 1.11 | 1.01 | 1.11 | 1.00 |
| 79 | 1.21 | 1.08 | 1.20 | 1.07 | 1.19 | 1.06 | 1.17 | 1.07 | 1.17 | 1.06 |
| 80 | 1.27 | 1.14 | 1.26 | 1.13 | 1.25 | 1.13 | 1.23 | 1.13 | 1.23 | 1.12 |
| 81 | 1.33 | 1.21 | 1.32 | 1.19 | 1.31 | 1.20 | 1.29 | 1.20 | 1.30 | 1.19 |
| 82 | 1.39 | 1.28 | 1.38 | 1.26 | 1.38 | 1.27 | 1.36 | 1.26 | 1.36 | 1.27 |
| 83 | 1.46 | 1.35 | 1.45 | 1.33 | 1.45 | 1.34 | 1.43 | 1.34 | 1.43 | 1.34 |
| 84 | 1.53 | 1.42 | 1.52 | 1.41 | 1.52 | 1.42 | 1.51 | 1.41 | 1.51 | 1.42 |
| 85 | 1.61 | 1.49 | 1.59 | 1.48 | 1.59 | 1.50 | 1.59 | 1.49 | 1.58 | 1.50 |
| 86 | 1.68 | 1.57 | 1.66 | 1.56 | 1.66 | 1.58 | 1.67 | 1.57 | 1.66 | 1.58 |
| 87 | 1.76 | 1.64 | 1.73 | 1.64 | 1.74 | 1.67 | 1.75 | 1.65 | 1.73 | 1.66 |
| 88 | 1.84 | 1.72 | 1.81 | 1.72 | 1.82 | 1.75 | 1.83 | 1.74 | 1.81 | 1.73 |
| 89 | 1.92 | 1.79 | 1.89 | 1.80 | 1.91 | 1.83 | 1.91 | 1.82 | 1.89 | 1.81 |
| 90 | 2.00 | 1.86 | 1.97 | 1.88 | 1.99 | 1.90 | 1.98 | 1.90 | 1.97 | 1.88 |
| 91 | 2.08 | 1.93 | 2.05 | 1.95 | 2.07 | 1.97 | 2.06 | 1.97 | 2.05 | 1.95 |
| 92 | 2.15 | 1.98 | 2.13 | 2.00 | 2.15 | 2.03 | 2.13 | 2.04 | 2.13 | 2.01 |
| 93 | 2.21 | 2.03 | 2.20 | 2.05 | 2.23 | 2.08 | 2.20 | 2.09 | 2.21 | 2.06 |
| 94 | 2.27 | 2.06 | 2.27 | 2.08 | 2.30 | 2.11 | 2.26 | 2.13 | 2.29 | 2.09 |
| 95 | 2.31 | 2.07 | 2.33 | 2.09 | 2.37 | 2.13 | 2.31 | 2.15 | 2.37 | 2.11 |
| 96 | 2.35 | 2.05 | 2.38 | 2.07 | 2.43 | 2.12 | 2.35 | 2.16 | 2.45 | 2.11 |
| 97 | 2.37 | 2.02 | 2.43 | 2.03 | 2.49 | 2.10 | 2.38 | 2.15 | 2.52 | 2.09 |
| 98 | 2.39 | 1.95 | 2.47 | 1.97 | 2.53 | 2.05 | 2.41 | 2.11 | 2.58 | 2.06 |

Chart 13: Inpatient Facility Costs by Age and Experience Year—Net Allowed Amount

| Age | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | |
|-----|------|--------|------|--------|------|--------|------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 0.92 | 0.62 | 1.19 | 0.80 | 1.23 | 0.77 | 1.25 | 0.83 | 1.30 | 0.87 |
| 66 | 0.87 | 0.59 | 1.12 | 0.73 | 1.16 | 0.74 | 1.15 | 0.76 | 1.18 | 0.80 |
| 67 | 0.84 | 0.57 | 1.05 | 0.69 | 1.10 | 0.71 | 1.08 | 0.71 | 1.09 | 0.75 |
| 68 | 0.81 | 0.56 | 0.99 | 0.66 | 1.04 | 0.69 | 1.01 | 0.67 | 1.02 | 0.71 |
| 69 | 0.80 | 0.56 | 0.94 | 0.64 | 0.99 | 0.67 | 0.96 | 0.65 | 0.96 | 0.68 |
| 70 | 0.79 | 0.57 | 0.90 | 0.64 | 0.94 | 0.66 | 0.92 | 0.65 | 0.93 | 0.67 |
| 71 | 0.79 | 0.59 | 0.88 | 0.65 | 0.91 | 0.66 | 0.90 | 0.66 | 0.90 | 0.67 |
| 72 | 0.80 | 0.62 | 0.86 | 0.67 | 0.89 | 0.67 | 0.88 | 0.67 | 0.89 | 0.68 |
| 73 | 0.81 | 0.65 | 0.86 | 0.69 | 0.87 | 0.68 | 0.88 | 0.69 | 0.88 | 0.70 |
| 74 | 0.82 | 0.70 | 0.87 | 0.71 | 0.87 | 0.70 | 0.89 | 0.72 | 0.88 | 0.72 |
| 75 | 0.84 | 0.74 | 0.88 | 0.74 | 0.87 | 0.72 | 0.90 | 0.75 | 0.89 | 0.75 |
| 76 | 0.87 | 0.80 | 0.90 | 0.77 | 0.88 | 0.76 | 0.92 | 0.78 | 0.90 | 0.77 |
| 77 | 0.91 | 0.87 | 0.93 | 0.82 | 0.90 | 0.80 | 0.93 | 0.82 | 0.91 | 0.81 |
| 78 | 0.95 | 0.94 | 0.96 | 0.87 | 0.93 | 0.86 | 0.95 | 0.87 | 0.93 | 0.85 |
| 79 | 1.00 | 1.01 | 1.00 | 0.93 | 0.96 | 0.91 | 0.98 | 0.92 | 0.96 | 0.90 |
| 80 | 1.06 | 1.10 | 1.04 | 0.99 | 1.00 | 0.98 | 1.01 | 0.98 | 1.00 | 0.96 |
| 81 | 1.12 | 1.19 | 1.09 | 1.06 | 1.05 | 1.05 | 1.05 | 1.04 | 1.05 | 1.02 |
| 82 | 1.20 | 1.28 | 1.14 | 1.14 | 1.11 | 1.12 | 1.10 | 1.11 | 1.10 | 1.10 |
| 83 | 1.28 | 1.38 | 1.19 | 1.22 | 1.18 | 1.20 | 1.15 | 1.19 | 1.16 | 1.17 |
| 84 | 1.38 | 1.49 | 1.26 | 1.31 | 1.25 | 1.28 | 1.22 | 1.27 | 1.23 | 1.25 |
| 85 | 1.49 | 1.60 | 1.32 | 1.40 | 1.33 | 1.37 | 1.29 | 1.35 | 1.30 | 1.33 |
| 86 | 1.60 | 1.72 | 1.40 | 1.49 | 1.41 | 1.45 | 1.36 | 1.44 | 1.37 | 1.41 |
| 87 | 1.71 | 1.84 | 1.48 | 1.58 | 1.49 | 1.54 | 1.44 | 1.53 | 1.44 | 1.49 |
| 88 | 1.83 | 1.95 | 1.56 | 1.67 | 1.57 | 1.62 | 1.52 | 1.62 | 1.52 | 1.57 |
| 89 | 1.94 | 2.06 | 1.65 | 1.75 | 1.65 | 1.70 | 1.59 | 1.70 | 1.59 | 1.65 |
| 90 | 2.05 | 2.15 | 1.73 | 1.83 | 1.73 | 1.78 | 1.67 | 1.78 | 1.66 | 1.71 |
| 91 | 2.15 | 2.23 | 1.82 | 1.89 | 1.80 | 1.84 | 1.75 | 1.85 | 1.73 | 1.77 |
| 92 | 2.24 | 2.29 | 1.90 | 1.94 | 1.87 | 1.89 | 1.82 | 1.90 | 1.80 | 1.81 |
| 93 | 2.30 | 2.33 | 1.97 | 1.97 | 1.93 | 1.92 | 1.89 | 1.93 | 1.86 | 1.83 |
| 94 | 2.35 | 2.34 | 2.03 | 1.98 | 1.99 | 1.94 | 1.95 | 1.94 | 1.93 | 1.84 |
| 95 | 2.38 | 2.31 | 2.09 | 1.95 | 2.05 | 1.92 | 2.01 | 1.93 | 1.99 | 1.82 |
| 96 | 2.38 | 2.25 | 2.13 | 1.90 | 2.09 | 1.89 | 2.06 | 1.90 | 2.05 | 1.77 |
| 97 | 2.37 | 2.15 | 2.17 | 1.81 | 2.13 | 1.82 | 2.11 | 1.84 | 2.10 | 1.70 |
| 98 | 2.33 | 2.02 | 2.19 | 1.70 | 2.16 | 1.73 | 2.15 | 1.75 | 2.15 | 1.60 |

Chart 14: Outpatient Facility Costs by Age and Experience Year—Total Allowed Charge

| Age | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | |
|-----|------|--------|------|--------|------|--------|------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 0.71 | 0.79 | 0.72 | 0.78 | 0.76 | 0.75 | 0.69 | 0.75 | 0.69 | 0.76 |
| 66 | 0.73 | 0.80 | 0.74 | 0.80 | 0.76 | 0.78 | 0.72 | 0.77 | 0.72 | 0.78 |
| 67 | 0.75 | 0.81 | 0.76 | 0.81 | 0.77 | 0.80 | 0.74 | 0.80 | 0.74 | 0.79 |
| 68 | 0.78 | 0.83 | 0.78 | 0.83 | 0.78 | 0.83 | 0.77 | 0.82 | 0.77 | 0.82 |
| 69 | 0.81 | 0.86 | 0.80 | 0.85 | 0.80 | 0.85 | 0.79 | 0.85 | 0.80 | 0.84 |
| 70 | 0.84 | 0.88 | 0.83 | 0.87 | 0.82 | 0.87 | 0.82 | 0.87 | 0.83 | 0.86 |
| 71 | 0.87 | 0.91 | 0.87 | 0.90 | 0.85 | 0.90 | 0.85 | 0.90 | 0.86 | 0.89 |
| 72 | 0.90 | 0.93 | 0.90 | 0.92 | 0.88 | 0.92 | 0.88 | 0.92 | 0.89 | 0.92 |
| 73 | 0.93 | 0.96 | 0.93 | 0.95 | 0.92 | 0.95 | 0.91 | 0.95 | 0.92 | 0.94 |
| 74 | 0.97 | 0.98 | 0.97 | 0.97 | 0.95 | 0.98 | 0.94 | 0.98 | 0.95 | 0.97 |
| 75 | 1.00 | 1.01 | 1.00 | 1.00 | 0.98 | 1.00 | 0.98 | 1.00 | 0.98 | 1.00 |
| 76 | 1.03 | 1.03 | 1.03 | 1.02 | 1.02 | 1.02 | 1.01 | 1.03 | 1.01 | 1.04 |
| 77 | 1.06 | 1.05 | 1.06 | 1.05 | 1.05 | 1.05 | 1.04 | 1.05 | 1.04 | 1.07 |
| 78 | 1.09 | 1.07 | 1.09 | 1.07 | 1.08 | 1.07 | 1.07 | 1.08 | 1.07 | 1.10 |
| 79 | 1.11 | 1.10 | 1.11 | 1.10 | 1.11 | 1.09 | 1.10 | 1.10 | 1.10 | 1.12 |
| 80 | 1.14 | 1.12 | 1.14 | 1.12 | 1.13 | 1.12 | 1.13 | 1.13 | 1.13 | 1.15 |
| 81 | 1.16 | 1.14 | 1.16 | 1.15 | 1.16 | 1.14 | 1.16 | 1.16 | 1.16 | 1.17 |
| 82 | 1.19 | 1.16 | 1.18 | 1.17 | 1.19 | 1.17 | 1.19 | 1.19 | 1.19 | 1.19 |
| 83 | 1.21 | 1.19 | 1.20 | 1.20 | 1.21 | 1.20 | 1.22 | 1.22 | 1.22 | 1.22 |
| 84 | 1.24 | 1.21 | 1.23 | 1.22 | 1.24 | 1.23 | 1.25 | 1.25 | 1.25 | 1.24 |
| 85 | 1.26 | 1.23 | 1.25 | 1.25 | 1.26 | 1.26 | 1.28 | 1.27 | 1.28 | 1.26 |
| 86 | 1.29 | 1.26 | 1.27 | 1.27 | 1.29 | 1.29 | 1.31 | 1.30 | 1.31 | 1.29 |
| 87 | 1.31 | 1.28 | 1.30 | 1.30 | 1.31 | 1.31 | 1.34 | 1.33 | 1.34 | 1.31 |
| 88 | 1.34 | 1.30 | 1.33 | 1.32 | 1.34 | 1.34 | 1.37 | 1.35 | 1.37 | 1.33 |
| 89 | 1.36 | 1.32 | 1.35 | 1.34 | 1.36 | 1.36 | 1.40 | 1.37 | 1.40 | 1.35 |
| 90 | 1.39 | 1.33 | 1.38 | 1.35 | 1.39 | 1.38 | 1.43 | 1.39 | 1.43 | 1.37 |
| 91 | 1.41 | 1.34 | 1.40 | 1.36 | 1.41 | 1.39 | 1.45 | 1.40 | 1.45 | 1.38 |
| 92 | 1.43 | 1.34 | 1.43 | 1.36 | 1.43 | 1.39 | 1.47 | 1.41 | 1.47 | 1.39 |
| 93 | 1.45 | 1.33 | 1.45 | 1.36 | 1.45 | 1.38 | 1.49 | 1.41 | 1.49 | 1.39 |
| 94 | 1.46 | 1.31 | 1.46 | 1.33 | 1.46 | 1.35 | 1.50 | 1.39 | 1.50 | 1.37 |
| 95 | 1.48 | 1.27 | 1.48 | 1.30 | 1.47 | 1.32 | 1.50 | 1.36 | 1.50 | 1.35 |
| 96 | 1.48 | 1.22 | 1.48 | 1.25 | 1.48 | 1.26 | 1.50 | 1.32 | 1.50 | 1.31 |
| 97 | 1.49 | 1.16 | 1.49 | 1.18 | 1.48 | 1.19 | 1.49 | 1.26 | 1.49 | 1.25 |
| 98 | 1.49 | 1.08 | 1.49 | 1.10 | 1.48 | 1.10 | 1.48 | 1.18 | 1.48 | 1.18 |

Chart 15: Outpatient Facility Costs by Age and Experience Year—Net Allowed Amount

| Age | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | |
|-----|------|--------|------|--------|------|--------|------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 1.02 | 1.03 | 1.01 | 1.05 | 1.03 | 0.99 | 0.99 | 0.97 | 1.00 | 1.02 |
| 66 | 1.02 | 1.02 | 1.03 | 1.04 | 1.04 | 0.99 | 1.01 | 0.98 | 1.00 | 1.02 |
| 67 | 1.03 | 1.01 | 1.04 | 1.03 | 1.05 | 0.99 | 1.02 | 1.00 | 1.01 | 1.01 |
| 68 | 1.04 | 1.01 | 1.05 | 1.02 | 1.06 | 1.00 | 1.04 | 1.00 | 1.03 | 1.01 |
| 69 | 1.05 | 1.01 | 1.06 | 1.01 | 1.07 | 1.00 | 1.05 | 1.01 | 1.04 | 1.01 |
| 70 | 1.06 | 1.00 | 1.07 | 1.00 | 1.07 | 1.00 | 1.06 | 1.01 | 1.05 | 1.01 |
| 71 | 1.07 | 1.01 | 1.08 | 0.99 | 1.08 | 1.00 | 1.07 | 1.01 | 1.06 | 1.01 |
| 72 | 1.08 | 1.01 | 1.09 | 0.99 | 1.08 | 1.00 | 1.08 | 1.01 | 1.07 | 1.01 |
| 73 | 1.10 | 1.01 | 1.09 | 0.99 | 1.09 | 1.00 | 1.08 | 1.01 | 1.08 | 1.00 |
| 74 | 1.11 | 1.01 | 1.10 | 0.99 | 1.09 | 1.00 | 1.09 | 1.00 | 1.09 | 1.00 |
| 75 | 1.11 | 1.01 | 1.11 | 0.99 | 1.10 | 1.00 | 1.09 | 1.00 | 1.09 | 0.99 |
| 76 | 1.12 | 1.00 | 1.11 | 0.99 | 1.10 | 0.99 | 1.09 | 0.99 | 1.09 | 0.99 |
| 77 | 1.12 | 1.00 | 1.12 | 0.99 | 1.10 | 0.99 | 1.09 | 0.99 | 1.09 | 0.98 |
| 78 | 1.12 | 0.99 | 1.11 | 0.98 | 1.10 | 0.97 | 1.09 | 0.98 | 1.09 | 0.97 |
| 79 | 1.11 | 0.98 | 1.11 | 0.97 | 1.10 | 0.96 | 1.08 | 0.98 | 1.09 | 0.96 |
| 80 | 1.11 | 0.96 | 1.10 | 0.96 | 1.09 | 0.95 | 1.07 | 0.97 | 1.08 | 0.95 |
| 81 | 1.09 | 0.95 | 1.08 | 0.94 | 1.08 | 0.94 | 1.06 | 0.96 | 1.08 | 0.94 |
| 82 | 1.08 | 0.93 | 1.07 | 0.93 | 1.06 | 0.93 | 1.05 | 0.95 | 1.07 | 0.93 |
| 83 | 1.06 | 0.91 | 1.05 | 0.91 | 1.05 | 0.92 | 1.05 | 0.94 | 1.06 | 0.92 |
| 84 | 1.04 | 0.90 | 1.03 | 0.90 | 1.03 | 0.91 | 1.03 | 0.93 | 1.05 | 0.91 |
| 85 | 1.02 | 0.88 | 1.01 | 0.88 | 1.02 | 0.90 | 1.02 | 0.91 | 1.04 | 0.90 |
| 86 | 1.00 | 0.86 | 0.99 | 0.86 | 1.00 | 0.89 | 1.01 | 0.90 | 1.02 | 0.89 |
| 87 | 0.97 | 0.84 | 0.97 | 0.85 | 0.98 | 0.88 | 1.00 | 0.89 | 1.01 | 0.88 |
| 88 | 0.95 | 0.82 | 0.95 | 0.83 | 0.96 | 0.87 | 0.98 | 0.88 | 0.99 | 0.87 |
| 89 | 0.93 | 0.80 | 0.93 | 0.81 | 0.95 | 0.85 | 0.97 | 0.87 | 0.98 | 0.87 |
| 90 | 0.91 | 0.79 | 0.90 | 0.79 | 0.93 | 0.84 | 0.96 | 0.86 | 0.96 | 0.86 |
| 91 | 0.88 | 0.77 | 0.88 | 0.78 | 0.91 | 0.83 | 0.95 | 0.85 | 0.94 | 0.85 |
| 92 | 0.86 | 0.75 | 0.86 | 0.76 | 0.89 | 0.81 | 0.93 | 0.84 | 0.92 | 0.83 |
| 93 | 0.84 | 0.73 | 0.84 | 0.74 | 0.87 | 0.79 | 0.92 | 0.82 | 0.90 | 0.82 |
| 94 | 0.81 | 0.70 | 0.82 | 0.71 | 0.84 | 0.76 | 0.91 | 0.80 | 0.88 | 0.80 |
| 95 | 0.79 | 0.67 | 0.80 | 0.68 | 0.82 | 0.73 | 0.89 | 0.78 | 0.86 | 0.77 |
| 96 | 0.77 | 0.63 | 0.78 | 0.65 | 0.79 | 0.70 | 0.88 | 0.75 | 0.83 | 0.74 |
| 97 | 0.74 | 0.59 | 0.75 | 0.60 | 0.76 | 0.65 | 0.86 | 0.71 | 0.81 | 0.71 |
| 98 | 0.72 | 0.54 | 0.73 | 0.56 | 0.73 | 0.60 | 0.85 | 0.66 | 0.78 | 0.66 |

Chart 16: Professional Costs by Age and Experience Years—Total Allowed Charge

| Age | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | |
|-----|------|--------|------|--------|------|--------|------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 0.73 | 0.80 | 0.74 | 0.79 | 0.72 | 0.79 | 0.73 | 0.81 | 0.72 | 0.81 |
| 66 | 0.77 | 0.83 | 0.78 | 0.82 | 0.76 | 0.82 | 0.77 | 0.83 | 0.76 | 0.83 |
| 67 | 0.80 | 0.86 | 0.81 | 0.85 | 0.80 | 0.85 | 0.80 | 0.86 | 0.80 | 0.86 |
| 68 | 0.84 | 0.88 | 0.84 | 0.87 | 0.84 | 0.88 | 0.84 | 0.89 | 0.84 | 0.88 |
| 69 | 0.88 | 0.91 | 0.88 | 0.90 | 0.88 | 0.91 | 0.88 | 0.91 | 0.88 | 0.91 |
| 70 | 0.92 | 0.93 | 0.92 | 0.93 | 0.92 | 0.94 | 0.91 | 0.94 | 0.92 | 0.93 |
| 71 | 0.96 | 0.96 | 0.96 | 0.95 | 0.95 | 0.96 | 0.95 | 0.96 | 0.95 | 0.96 |
| 72 | 1.00 | 0.98 | 1.00 | 0.98 | 0.99 | 0.98 | 0.99 | 0.98 | 0.99 | 0.98 |
| 73 | 1.04 | 1.00 | 1.03 | 1.00 | 1.03 | 1.00 | 1.02 | 1.00 | 1.02 | 1.00 |
| 74 | 1.08 | 1.02 | 1.07 | 1.02 | 1.06 | 1.02 | 1.05 | 1.02 | 1.05 | 1.02 |
| 75 | 1.11 | 1.04 | 1.10 | 1.04 | 1.10 | 1.04 | 1.09 | 1.04 | 1.08 | 1.04 |
| 76 | 1.15 | 1.05 | 1.14 | 1.05 | 1.13 | 1.05 | 1.12 | 1.05 | 1.11 | 1.05 |
| 77 | 1.17 | 1.06 | 1.17 | 1.06 | 1.16 | 1.06 | 1.14 | 1.06 | 1.14 | 1.06 |
| 78 | 1.20 | 1.07 | 1.19 | 1.07 | 1.19 | 1.07 | 1.17 | 1.07 | 1.16 | 1.07 |
| 79 | 1.22 | 1.08 | 1.21 | 1.08 | 1.21 | 1.08 | 1.19 | 1.08 | 1.19 | 1.08 |
| 80 | 1.24 | 1.08 | 1.23 | 1.08 | 1.23 | 1.08 | 1.21 | 1.09 | 1.21 | 1.09 |
| 81 | 1.25 | 1.08 | 1.24 | 1.08 | 1.24 | 1.09 | 1.23 | 1.09 | 1.22 | 1.09 |
| 82 | 1.26 | 1.08 | 1.26 | 1.08 | 1.25 | 1.09 | 1.24 | 1.09 | 1.23 | 1.10 |
| 83 | 1.27 | 1.08 | 1.26 | 1.08 | 1.26 | 1.08 | 1.25 | 1.09 | 1.25 | 1.10 |
| 84 | 1.27 | 1.07 | 1.27 | 1.07 | 1.26 | 1.08 | 1.26 | 1.08 | 1.25 | 1.09 |
| 85 | 1.27 | 1.06 | 1.27 | 1.07 | 1.26 | 1.07 | 1.26 | 1.08 | 1.26 | 1.09 |
| 86 | 1.26 | 1.05 | 1.26 | 1.06 | 1.26 | 1.07 | 1.26 | 1.07 | 1.26 | 1.08 |
| 87 | 1.26 | 1.04 | 1.26 | 1.05 | 1.25 | 1.06 | 1.25 | 1.06 | 1.26 | 1.07 |
| 88 | 1.25 | 1.02 | 1.25 | 1.03 | 1.25 | 1.04 | 1.25 | 1.04 | 1.25 | 1.06 |
| 89 | 1.24 | 1.01 | 1.24 | 1.02 | 1.23 | 1.03 | 1.24 | 1.03 | 1.25 | 1.04 |
| 90 | 1.22 | 0.99 | 1.23 | 1.00 | 1.22 | 1.01 | 1.23 | 1.01 | 1.23 | 1.02 |
| 91 | 1.21 | 0.97 | 1.21 | 0.98 | 1.20 | 0.99 | 1.21 | 1.00 | 1.22 | 1.00 |
| 92 | 1.19 | 0.94 | 1.20 | 0.96 | 1.18 | 0.97 | 1.19 | 0.98 | 1.20 | 0.98 |
| 93 | 1.17 | 0.92 | 1.18 | 0.94 | 1.16 | 0.95 | 1.17 | 0.95 | 1.18 | 0.95 |
| 94 | 1.14 | 0.89 | 1.15 | 0.91 | 1.14 | 0.92 | 1.14 | 0.93 | 1.16 | 0.92 |
| 95 | 1.11 | 0.86 | 1.13 | 0.87 | 1.11 | 0.89 | 1.11 | 0.90 | 1.13 | 0.89 |
| 96 | 1.08 | 0.82 | 1.10 | 0.83 | 1.08 | 0.86 | 1.08 | 0.86 | 1.10 | 0.85 |
| 97 | 1.05 | 0.78 | 1.07 | 0.79 | 1.05 | 0.82 | 1.05 | 0.83 | 1.07 | 0.81 |
| 98 | 1.02 | 0.73 | 1.03 | 0.74 | 1.01 | 0.78 | 1.01 | 0.79 | 1.03 | 0.77 |

Chart 17: Professional Costs by Age and Experience Years—Net Allowed Amount

| Age | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | |
|-----|------|--------|------|--------|------|--------|------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 0.77 | 0.83 | 0.79 | 0.82 | 0.77 | 0.82 | 0.77 | 0.84 | 0.76 | 0.84 |
| 66 | 0.80 | 0.85 | 0.81 | 0.84 | 0.80 | 0.85 | 0.81 | 0.86 | 0.80 | 0.86 |
| 67 | 0.83 | 0.88 | 0.84 | 0.87 | 0.84 | 0.87 | 0.84 | 0.88 | 0.83 | 0.88 |
| 68 | 0.87 | 0.90 | 0.87 | 0.89 | 0.87 | 0.90 | 0.87 | 0.90 | 0.87 | 0.90 |
| 69 | 0.90 | 0.92 | 0.90 | 0.91 | 0.90 | 0.92 | 0.90 | 0.92 | 0.90 | 0.92 |
| 70 | 0.93 | 0.94 | 0.93 | 0.93 | 0.93 | 0.94 | 0.93 | 0.94 | 0.93 | 0.94 |
| 71 | 0.97 | 0.96 | 0.97 | 0.96 | 0.97 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| 72 | 1.00 | 0.98 | 1.00 | 0.98 | 1.00 | 0.98 | 0.99 | 0.98 | 0.99 | 0.98 |
| 73 | 1.03 | 0.99 | 1.03 | 0.99 | 1.03 | 1.00 | 1.02 | 1.00 | 1.02 | 1.00 |
| 74 | 1.07 | 1.01 | 1.06 | 1.01 | 1.06 | 1.01 | 1.05 | 1.01 | 1.05 | 1.01 |
| 75 | 1.10 | 1.03 | 1.09 | 1.03 | 1.09 | 1.02 | 1.08 | 1.03 | 1.07 | 1.02 |
| 76 | 1.13 | 1.04 | 1.12 | 1.04 | 1.11 | 1.04 | 1.10 | 1.04 | 1.10 | 1.04 |
| 77 | 1.15 | 1.05 | 1.14 | 1.05 | 1.14 | 1.05 | 1.12 | 1.05 | 1.12 | 1.05 |
| 78 | 1.17 | 1.06 | 1.16 | 1.06 | 1.16 | 1.05 | 1.15 | 1.06 | 1.14 | 1.06 |
| 79 | 1.19 | 1.06 | 1.18 | 1.06 | 1.18 | 1.06 | 1.17 | 1.06 | 1.16 | 1.06 |
| 80 | 1.20 | 1.07 | 1.20 | 1.07 | 1.19 | 1.07 | 1.18 | 1.07 | 1.18 | 1.07 |
| 81 | 1.21 | 1.07 | 1.21 | 1.07 | 1.21 | 1.07 | 1.20 | 1.07 | 1.19 | 1.07 |
| 82 | 1.22 | 1.07 | 1.22 | 1.07 | 1.22 | 1.07 | 1.21 | 1.07 | 1.20 | 1.08 |
| 83 | 1.23 | 1.06 | 1.23 | 1.07 | 1.22 | 1.07 | 1.21 | 1.07 | 1.21 | 1.08 |
| 84 | 1.23 | 1.06 | 1.23 | 1.06 | 1.23 | 1.07 | 1.22 | 1.07 | 1.22 | 1.08 |
| 85 | 1.23 | 1.05 | 1.23 | 1.06 | 1.23 | 1.06 | 1.22 | 1.06 | 1.22 | 1.07 |
| 86 | 1.23 | 1.04 | 1.23 | 1.05 | 1.23 | 1.06 | 1.22 | 1.06 | 1.22 | 1.07 |
| 87 | 1.22 | 1.03 | 1.23 | 1.04 | 1.22 | 1.05 | 1.22 | 1.05 | 1.22 | 1.06 |
| 88 | 1.22 | 1.02 | 1.22 | 1.03 | 1.22 | 1.04 | 1.22 | 1.04 | 1.22 | 1.05 |
| 89 | 1.21 | 1.01 | 1.21 | 1.02 | 1.21 | 1.03 | 1.21 | 1.03 | 1.22 | 1.04 |
| 90 | 1.20 | 1.00 | 1.20 | 1.01 | 1.20 | 1.02 | 1.20 | 1.02 | 1.21 | 1.02 |
| 91 | 1.18 | 0.98 | 1.19 | 0.99 | 1.18 | 1.00 | 1.19 | 1.00 | 1.20 | 1.01 |
| 92 | 1.17 | 0.96 | 1.18 | 0.97 | 1.17 | 0.98 | 1.17 | 0.98 | 1.19 | 0.99 |
| 93 | 1.15 | 0.94 | 1.16 | 0.95 | 1.15 | 0.96 | 1.15 | 0.96 | 1.17 | 0.97 |
| 94 | 1.13 | 0.91 | 1.14 | 0.93 | 1.13 | 0.94 | 1.13 | 0.94 | 1.15 | 0.94 |
| 95 | 1.11 | 0.88 | 1.12 | 0.90 | 1.11 | 0.91 | 1.11 | 0.92 | 1.13 | 0.91 |
| 96 | 1.09 | 0.85 | 1.10 | 0.86 | 1.08 | 0.88 | 1.08 | 0.89 | 1.11 | 0.88 |
| 97 | 1.06 | 0.81 | 1.07 | 0.82 | 1.06 | 0.85 | 1.05 | 0.85 | 1.08 | 0.84 |
| 98 | 1.03 | 0.77 | 1.04 | 0.78 | 1.03 | 0.81 | 1.02 | 0.82 | 1.05 | 0.80 |

Chart 18: Pharmacy Costs by Age and Experience Years—Medicare Ages

| Age | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | |
|-----|------|--------|------|--------|------|--------|------|--------|------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 0.95 | 0.97 | 0.87 | 0.89 | 0.85 | 0.86 | 0.84 | 0.83 | 0.78 | 0.77 |
| 66 | 0.96 | 0.97 | 0.90 | 0.91 | 0.88 | 0.90 | 0.88 | 0.87 | 0.83 | 0.82 |
| 67 | 0.97 | 0.97 | 0.92 | 0.94 | 0.92 | 0.93 | 0.92 | 0.90 | 0.88 | 0.87 |
| 68 | 0.99 | 0.98 | 0.95 | 0.96 | 0.95 | 0.96 | 0.96 | 0.93 | 0.93 | 0.91 |
| 69 | 1.00 | 0.99 | 0.98 | 0.98 | 0.98 | 0.98 | 0.99 | 0.96 | 0.97 | 0.95 |
| 70 | 1.01 | 1.00 | 1.00 | 1.00 | 1.01 | 1.00 | 1.02 | 0.98 | 1.00 | 0.98 |
| 71 | 1.03 | 1.01 | 1.02 | 1.01 | 1.03 | 1.02 | 1.04 | 1.00 | 1.03 | 1.01 |
| 72 | 1.04 | 1.02 | 1.04 | 1.03 | 1.05 | 1.04 | 1.06 | 1.01 | 1.05 | 1.03 |
| 73 | 1.06 | 1.02 | 1.05 | 1.04 | 1.07 | 1.05 | 1.08 | 1.03 | 1.07 | 1.05 |
| 74 | 1.07 | 1.03 | 1.07 | 1.05 | 1.08 | 1.06 | 1.09 | 1.04 | 1.09 | 1.06 |
| 75 | 1.08 | 1.04 | 1.08 | 1.05 | 1.09 | 1.06 | 1.10 | 1.04 | 1.10 | 1.07 |
| 76 | 1.09 | 1.04 | 1.09 | 1.06 | 1.11 | 1.06 | 1.11 | 1.05 | 1.11 | 1.08 |
| 77 | 1.10 | 1.04 | 1.10 | 1.07 | 1.11 | 1.07 | 1.12 | 1.05 | 1.12 | 1.09 |
| 78 | 1.10 | 1.04 | 1.11 | 1.07 | 1.12 | 1.07 | 1.13 | 1.05 | 1.13 | 1.09 |
| 79 | 1.10 | 1.04 | 1.11 | 1.07 | 1.12 | 1.07 | 1.13 | 1.06 | 1.14 | 1.10 |
| 80 | 1.10 | 1.03 | 1.10 | 1.07 | 1.11 | 1.06 | 1.13 | 1.06 | 1.14 | 1.10 |
| 81 | 1.09 | 1.02 | 1.09 | 1.06 | 1.10 | 1.06 | 1.12 | 1.05 | 1.13 | 1.09 |
| 82 | 1.08 | 1.01 | 1.08 | 1.06 | 1.08 | 1.05 | 1.11 | 1.05 | 1.12 | 1.08 |
| 83 | 1.06 | 0.99 | 1.06 | 1.04 | 1.06 | 1.04 | 1.09 | 1.04 | 1.10 | 1.07 |
| 84 | 1.05 | 0.97 | 1.04 | 1.02 | 1.04 | 1.03 | 1.07 | 1.03 | 1.08 | 1.06 |
| 85 | 1.03 | 0.95 | 1.01 | 1.00 | 1.02 | 1.01 | 1.04 | 1.01 | 1.05 | 1.04 |
| 86 | 1.01 | 0.93 | 0.99 | 0.98 | 0.99 | 0.99 | 1.02 | 1.00 | 1.02 | 1.03 |
| 87 | 0.98 | 0.90 | 0.97 | 0.96 | 0.97 | 0.97 | 1.00 | 0.98 | 0.99 | 1.01 |
| 88 | 0.96 | 0.88 | 0.95 | 0.93 | 0.95 | 0.94 | 0.97 | 0.96 | 0.96 | 0.99 |
| 89 | 0.94 | 0.85 | 0.94 | 0.91 | 0.93 | 0.92 | 0.95 | 0.94 | 0.94 | 0.97 |
| 90 | 0.93 | 0.83 | 0.92 | 0.89 | 0.92 | 0.89 | 0.93 | 0.92 | 0.91 | 0.95 |
| 91 | 0.91 | 0.80 | 0.91 | 0.87 | 0.90 | 0.86 | 0.92 | 0.91 | 0.89 | 0.94 |
| 92 | 0.89 | 0.77 | 0.90 | 0.85 | 0.89 | 0.83 | 0.90 | 0.90 | 0.87 | 0.92 |
| 93 | 0.87 | 0.75 | 0.89 | 0.83 | 0.87 | 0.81 | 0.89 | 0.88 | 0.84 | 0.90 |
| 94 | 0.86 | 0.73 | 0.88 | 0.81 | 0.86 | 0.78 | 0.88 | 0.87 | 0.82 | 0.89 |
| 95 | 0.84 | 0.70 | 0.87 | 0.79 | 0.85 | 0.76 | 0.87 | 0.86 | 0.81 | 0.88 |
| 96 | 0.83 | 0.68 | 0.87 | 0.78 | 0.84 | 0.74 | 0.86 | 0.85 | 0.79 | 0.86 |
| 97 | 0.81 | 0.66 | 0.86 | 0.76 | 0.82 | 0.72 | 0.85 | 0.84 | 0.77 | 0.85 |
| 98 | 0.80 | 0.64 | 0.85 | 0.74 | 0.81 | 0.70 | 0.84 | 0.82 | 0.76 | 0.84 |

Chart 19: Comparison of Medicare Costs (Total, Medicare, Net)

| Age | Total Charge | | Medicare Benefit | | Net Amount | |
|-----|--------------|--------|------------------|--------|------------|--------|
| | Male | Female | Male | Female | Male | Female |
| 65 | 0.69 | 0.67 | 0.63 | 0.63 | 0.99 | 0.89 |
| 66 | 0.71 | 0.69 | 0.66 | 0.65 | 0.97 | 0.87 |
| 67 | 0.73 | 0.71 | 0.69 | 0.68 | 0.95 | 0.86 |
| 68 | 0.76 | 0.73 | 0.72 | 0.71 | 0.95 | 0.85 |
| 69 | 0.79 | 0.76 | 0.76 | 0.74 | 0.95 | 0.85 |
| 70 | 0.82 | 0.78 | 0.79 | 0.77 | 0.95 | 0.86 |
| 71 | 0.85 | 0.81 | 0.83 | 0.80 | 0.96 | 0.87 |
| 72 | 0.89 | 0.84 | 0.87 | 0.84 | 0.97 | 0.88 |
| 73 | 0.92 | 0.88 | 0.91 | 0.87 | 0.98 | 0.89 |
| 74 | 0.96 | 0.91 | 0.95 | 0.91 | 1.00 | 0.91 |
| 75 | 1.00 | 0.94 | 1.00 | 0.94 | 1.01 | 0.93 |
| 76 | 1.04 | 0.97 | 1.04 | 0.98 | 1.02 | 0.95 |
| 77 | 1.08 | 1.01 | 1.08 | 1.01 | 1.04 | 0.97 |
| 78 | 1.12 | 1.04 | 1.13 | 1.05 | 1.06 | 1.00 |
| 79 | 1.16 | 1.08 | 1.18 | 1.09 | 1.07 | 1.02 |
| 80 | 1.20 | 1.12 | 1.22 | 1.13 | 1.09 | 1.04 |
| 81 | 1.25 | 1.16 | 1.27 | 1.18 | 1.11 | 1.05 |
| 82 | 1.29 | 1.20 | 1.32 | 1.22 | 1.14 | 1.07 |
| 83 | 1.33 | 1.24 | 1.36 | 1.27 | 1.16 | 1.09 |
| 84 | 1.37 | 1.28 | 1.41 | 1.31 | 1.18 | 1.11 |
| 85 | 1.42 | 1.32 | 1.46 | 1.36 | 1.20 | 1.12 |
| 86 | 1.46 | 1.36 | 1.50 | 1.40 | 1.23 | 1.14 |
| 87 | 1.50 | 1.40 | 1.55 | 1.44 | 1.25 | 1.16 |
| 88 | 1.54 | 1.44 | 1.60 | 1.48 | 1.27 | 1.18 |
| 89 | 1.59 | 1.47 | 1.64 | 1.52 | 1.29 | 1.20 |
| 90 | 1.63 | 1.51 | 1.69 | 1.56 | 1.31 | 1.21 |
| 91 | 1.67 | 1.53 | 1.73 | 1.59 | 1.32 | 1.23 |
| 92 | 1.70 | 1.56 | 1.77 | 1.62 | 1.34 | 1.23 |
| 93 | 1.74 | 1.57 | 1.82 | 1.64 | 1.35 | 1.23 |
| 94 | 1.77 | 1.58 | 1.85 | 1.65 | 1.36 | 1.21 |
| 95 | 1.80 | 1.57 | 1.89 | 1.64 | 1.36 | 1.19 |
| 96 | 1.83 | 1.55 | 1.92 | 1.62 | 1.36 | 1.15 |
| 97 | 1.85 | 1.51 | 1.94 | 1.59 | 1.36 | 1.10 |
| 98 | 1.87 | 1.47 | 1.96 | 1.55 | 1.36 | 1.04 |

Chart 20: Net Allowed Amount by Age for Specific Plan Design

| Age | 20.00% Inpatient | | 10.00% Outpatient | | 10.00% Professional | | 60.00% Pharmacy | | 100.00% Total | |
|-----|---------------------|--------|----------------------|--------|------------------------|--------|--------------------|--------|------------------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 65 | 1.296 | 0.873 | 0.996 | 1.022 | 0.763 | 0.836 | 0.778 | 0.769 | 0.902 | 0.822 |
| 66 | 1.184 | 0.801 | 1.004 | 1.018 | 0.800 | 0.858 | 0.834 | 0.824 | 0.917 | 0.842 |
| 67 | 1.091 | 0.745 | 1.015 | 1.014 | 0.835 | 0.880 | 0.883 | 0.872 | 0.933 | 0.862 |
| 68 | 1.018 | 0.706 | 1.026 | 1.011 | 0.869 | 0.901 | 0.927 | 0.915 | 0.949 | 0.881 |
| 69 | 0.964 | 0.682 | 1.038 | 1.010 | 0.902 | 0.922 | 0.965 | 0.951 | 0.966 | 0.900 |
| 70 | 0.927 | 0.672 | 1.050 | 1.009 | 0.934 | 0.942 | 0.999 | 0.982 | 0.983 | 0.918 |
| 71 | 0.904 | 0.673 | 1.062 | 1.008 | 0.964 | 0.961 | 1.028 | 1.007 | 1.000 | 0.936 |
| 72 | 0.890 | 0.683 | 1.072 | 1.006 | 0.993 | 0.979 | 1.052 | 1.029 | 1.016 | 0.952 |
| 73 | 0.884 | 0.699 | 1.080 | 1.003 | 1.022 | 0.995 | 1.072 | 1.046 | 1.030 | 0.968 |
| 74 | 0.884 | 0.720 | 1.088 | 0.998 | 1.048 | 1.010 | 1.089 | 1.061 | 1.044 | 0.982 |
| 75 | 0.888 | 0.745 | 1.092 | 0.993 | 1.074 | 1.024 | 1.103 | 1.073 | 1.056 | 0.995 |
| 76 | 0.896 | 0.774 | 1.095 | 0.986 | 1.098 | 1.036 | 1.114 | 1.083 | 1.067 | 1.007 |
| 77 | 0.911 | 0.809 | 1.095 | 0.978 | 1.120 | 1.047 | 1.124 | 1.089 | 1.078 | 1.018 |
| 78 | 0.932 | 0.851 | 1.092 | 0.970 | 1.141 | 1.056 | 1.132 | 1.094 | 1.089 | 1.029 |
| 79 | 0.962 | 0.900 | 1.088 | 0.961 | 1.159 | 1.064 | 1.137 | 1.097 | 1.099 | 1.040 |
| 80 | 1.001 | 0.958 | 1.082 | 0.952 | 1.175 | 1.070 | 1.137 | 1.096 | 1.108 | 1.051 |
| 81 | 1.047 | 1.023 | 1.076 | 0.943 | 1.189 | 1.075 | 1.132 | 1.092 | 1.115 | 1.062 |
| 82 | 1.102 | 1.096 | 1.068 | 0.933 | 1.200 | 1.078 | 1.120 | 1.084 | 1.119 | 1.071 |
| 83 | 1.162 | 1.173 | 1.058 | 0.924 | 1.210 | 1.079 | 1.102 | 1.073 | 1.121 | 1.079 |
| 84 | 1.228 | 1.253 | 1.047 | 0.914 | 1.216 | 1.077 | 1.079 | 1.060 | 1.119 | 1.085 |
| 85 | 1.297 | 1.333 | 1.035 | 0.903 | 1.221 | 1.074 | 1.052 | 1.044 | 1.116 | 1.091 |
| 86 | 1.369 | 1.414 | 1.023 | 0.893 | 1.223 | 1.068 | 1.023 | 1.026 | 1.112 | 1.095 |
| 87 | 1.442 | 1.494 | 1.009 | 0.884 | 1.223 | 1.060 | 0.993 | 1.007 | 1.108 | 1.097 |
| 88 | 1.515 | 1.572 | 0.994 | 0.874 | 1.221 | 1.051 | 0.965 | 0.988 | 1.103 | 1.100 |
| 89 | 1.588 | 1.645 | 0.978 | 0.865 | 1.216 | 1.039 | 0.937 | 0.970 | 1.099 | 1.101 |
| 90 | 1.659 | 1.712 | 0.961 | 0.856 | 1.209 | 1.024 | 0.912 | 0.952 | 1.096 | 1.102 |
| 91 | 1.729 | 1.768 | 0.943 | 0.845 | 1.199 | 1.008 | 0.888 | 0.935 | 1.093 | 1.100 |
| 92 | 1.798 | 1.810 | 0.924 | 0.833 | 1.186 | 0.988 | 0.865 | 0.919 | 1.090 | 1.096 |
| 93 | 1.864 | 1.834 | 0.903 | 0.817 | 1.171 | 0.966 | 0.845 | 0.904 | 1.087 | 1.088 |
| 94 | 1.928 | 1.838 | 0.882 | 0.797 | 1.152 | 0.941 | 0.825 | 0.889 | 1.084 | 1.075 |
| 95 | 1.989 | 1.818 | 0.859 | 0.773 | 1.131 | 0.912 | 0.806 | 0.875 | 1.080 | 1.057 |
| 96 | 2.045 | 1.773 | 0.834 | 0.742 | 1.107 | 0.879 | 0.789 | 0.862 | 1.076 | 1.034 |
| 97 | 2.098 | 1.702 | 0.808 | 0.706 | 1.080 | 0.843 | 0.772 | 0.849 | 1.072 | 1.005 |
| 98 | 2.146 | 1.604 | 0.780 | 0.663 | 1.050 | 0.803 | 0.757 | 0.836 | 1.066 | 0.969 |

Chart 21: Commercial Costs by Age Over 65

| Age | Male | Female |
|-----|------|--------|
| 66 | 1.27 | 1.11 |
| 67 | 1.29 | 1.10 |
| 68 | 1.27 | 1.05 |
| 69 | 1.22 | 1.03 |
| 70 | 1.21 | 0.98 |
| 71 | 1.18 | 0.94 |
| 72 | 1.14 | 0.93 |
| 73 | 1.11 | 0.92 |
| 74 | 1.14 | 0.89 |
| 75 | 1.08 | 0.88 |
| 76 | 1.05 | 0.88 |
| 77 | 1.01 | 0.87 |
| 78 | 1.01 | 0.86 |
| 79 | 1.01 | 0.86 |
| 80 | 0.98 | 0.87 |
| 81 | 0.97 | 0.87 |
| 82 | 0.94 | 0.83 |
| 83 | 0.95 | 0.84 |
| 84 | 0.91 | 0.85 |
| 85 | 0.92 | 0.85 |
| 86 | 0.88 | 0.84 |
| 87 | 0.87 | 0.81 |
| 88 | 0.85 | 0.81 |
| 89 | 0.84 | 0.82 |
| 90 | 0.83 | 0.79 |
| 91 | 0.72 | 0.71 |

Chart 22: Cost Index of Members with Cancer Diagnosis versus Total Members

| Age | 2002-03 Overall | | 2002-03 Cancer | | 2009-10 Overall | | 2009-10 Cancer | |
|-----|-----------------|--------|----------------|--------|-----------------|--------|----------------|--------|
| | Male | Female | Male | Female | Male | Female | Male | Female |
| 0 | 2.93 | 2.44 | 10.26 | 8.98 | 2.97 | 2.53 | 11.97 | 9.52 |
| 1 | 1.84 | 1.54 | 9.05 | 7.97 | 1.80 | 1.53 | 10.48 | 8.38 |
| 2 | 1.06 | 0.89 | 7.94 | 7.02 | 1.00 | 0.84 | 9.11 | 7.33 |
| 3 | 0.58 | 0.49 | 6.92 | 6.16 | 0.54 | 0.45 | 7.85 | 6.35 |
| 4 | 0.34 | 0.29 | 6.00 | 5.36 | 0.36 | 0.29 | 6.70 | 5.47 |
| 5 | 0.26 | 0.22 | 5.17 | 4.65 | 0.33 | 0.26 | 5.68 | 4.67 |
| 6 | 0.27 | 0.22 | 4.44 | 4.01 | 0.35 | 0.28 | 4.77 | 3.96 |
| 7 | 0.30 | 0.24 | 3.81 | 3.45 | 0.38 | 0.31 | 3.98 | 3.34 |
| 8 | 0.33 | 0.27 | 3.27 | 2.97 | 0.39 | 0.32 | 3.33 | 2.82 |
| 9 | 0.35 | 0.28 | 2.83 | 2.56 | 0.39 | 0.32 | 2.81 | 2.39 |
| 10 | 0.35 | 0.29 | 2.47 | 2.23 | 0.38 | 0.32 | 2.41 | 2.06 |
| 11 | 0.36 | 0.30 | 2.19 | 1.96 | 0.39 | 0.33 | 2.12 | 1.81 |
| 12 | 0.38 | 0.32 | 1.99 | 1.75 | 0.41 | 0.35 | 1.93 | 1.64 |
| 13 | 0.40 | 0.34 | 1.85 | 1.61 | 0.44 | 0.39 | 1.82 | 1.54 |
| 14 | 0.43 | 0.38 | 1.75 | 1.51 | 0.49 | 0.45 | 1.77 | 1.48 |
| 15 | 0.45 | 0.43 | 1.70 | 1.45 | 0.52 | 0.50 | 1.75 | 1.46 |
| 16 | 0.47 | 0.47 | 1.67 | 1.43 | 0.55 | 0.55 | 1.76 | 1.47 |
| 17 | 0.47 | 0.51 | 1.67 | 1.44 | 0.55 | 0.58 | 1.77 | 1.48 |
| 18 | 0.45 | 0.54 | 1.68 | 1.47 | 0.52 | 0.59 | 1.78 | 1.49 |
| 19 | 0.42 | 0.57 | 1.70 | 1.52 | 0.47 | 0.58 | 1.78 | 1.51 |
| 20 | 0.39 | 0.60 | 1.72 | 1.59 | 0.43 | 0.58 | 1.78 | 1.52 |
| 21 | 0.37 | 0.64 | 1.74 | 1.66 | 0.39 | 0.58 | 1.76 | 1.53 |
| 22 | 0.36 | 0.69 | 1.76 | 1.74 | 0.38 | 0.61 | 1.74 | 1.54 |
| 23 | 0.36 | 0.76 | 1.79 | 1.82 | 0.37 | 0.66 | 1.71 | 1.56 |
| 24 | 0.37 | 0.83 | 1.81 | 1.90 | 0.37 | 0.72 | 1.68 | 1.59 |
| 25 | 0.39 | 0.90 | 1.83 | 1.99 | 0.38 | 0.79 | 1.64 | 1.63 |
| 26 | 0.41 | 0.98 | 1.86 | 2.07 | 0.39 | 0.86 | 1.61 | 1.68 |
| 27 | 0.43 | 1.04 | 1.88 | 2.14 | 0.41 | 0.93 | 1.58 | 1.75 |
| 28 | 0.45 | 1.10 | 1.91 | 2.22 | 0.43 | 1.00 | 1.56 | 1.83 |
| 29 | 0.47 | 1.14 | 1.94 | 2.30 | 0.45 | 1.06 | 1.55 | 1.92 |
| 30 | 0.49 | 1.18 | 1.97 | 2.39 | 0.47 | 1.11 | 1.55 | 2.02 |
| 31 | 0.52 | 1.20 | 2.00 | 2.47 | 0.50 | 1.15 | 1.56 | 2.12 |
| 32 | 0.54 | 1.22 | 2.04 | 2.56 | 0.52 | 1.18 | 1.59 | 2.24 |
| 33 | 0.56 | 1.23 | 2.07 | 2.66 | 0.54 | 1.20 | 1.63 | 2.35 |
| 34 | 0.58 | 1.23 | 2.11 | 2.75 | 0.56 | 1.20 | 1.68 | 2.47 |
| 35 | 0.61 | 1.22 | 2.16 | 2.86 | 0.59 | 1.21 | 1.74 | 2.60 |
| 36 | 0.64 | 1.21 | 2.21 | 2.97 | 0.61 | 1.20 | 1.81 | 2.74 |
| 37 | 0.66 | 1.19 | 2.27 | 3.08 | 0.65 | 1.20 | 1.89 | 2.88 |
| 38 | 0.69 | 1.18 | 2.34 | 3.20 | 0.68 | 1.20 | 1.97 | 3.03 |
| 39 | 0.72 | 1.17 | 2.42 | 3.33 | 0.71 | 1.20 | 2.06 | 3.20 |
| 40 | 0.75 | 1.17 | 2.51 | 3.46 | 0.74 | 1.21 | 2.15 | 3.36 |
| 41 | 0.78 | 1.18 | 2.61 | 3.59 | 0.78 | 1.22 | 2.26 | 3.52 |
| 42 | 0.81 | 1.19 | 2.71 | 3.72 | 0.81 | 1.23 | 2.36 | 3.66 |
| 43 | 0.85 | 1.21 | 2.82 | 3.86 | 0.84 | 1.24 | 2.48 | 3.79 |
| 44 | 0.89 | 1.23 | 2.94 | 3.99 | 0.88 | 1.26 | 2.59 | 3.90 |
| 45 | 0.93 | 1.27 | 3.06 | 4.12 | 0.92 | 1.28 | 2.71 | 4.00 |
| 46 | 0.98 | 1.31 | 3.18 | 4.25 | 0.97 | 1.31 | 2.82 | 4.08 |
| 47 | 1.04 | 1.36 | 3.30 | 4.38 | 1.01 | 1.35 | 2.94 | 4.16 |
| 48 | 1.10 | 1.41 | 3.42 | 4.51 | 1.07 | 1.39 | 3.06 | 4.24 |
| 49 | 1.16 | 1.46 | 3.54 | 4.63 | 1.14 | 1.45 | 3.17 | 4.32 |
| 50 | 1.23 | 1.52 | 3.66 | 4.75 | 1.21 | 1.50 | 3.30 | 4.41 |
| 51 | 1.30 | 1.57 | 3.79 | 4.88 | 1.28 | 1.56 | 3.43 | 4.51 |
| 52 | 1.37 | 1.62 | 3.93 | 5.00 | 1.35 | 1.61 | 3.57 | 4.62 |
| 53 | 1.45 | 1.66 | 4.07 | 5.14 | 1.42 | 1.66 | 3.73 | 4.74 |
| 54 | 1.52 | 1.71 | 4.23 | 5.28 | 1.50 | 1.70 | 3.89 | 4.87 |
| 55 | 1.60 | 1.76 | 4.39 | 5.42 | 1.58 | 1.75 | 4.06 | 5.01 |
| 56 | 1.68 | 1.82 | 4.56 | 5.57 | 1.67 | 1.79 | 4.22 | 5.14 |
| 57 | 1.76 | 1.87 | 4.73 | 5.71 | 1.75 | 1.84 | 4.38 | 5.27 |
| 58 | 1.85 | 1.93 | 4.90 | 5.86 | 1.84 | 1.90 | 4.54 | 5.39 |
| 59 | 1.94 | 1.99 | 5.07 | 6.00 | 1.94 | 1.96 | 4.67 | 5.51 |
| 60 | 2.04 | 2.06 | 5.23 | 6.14 | 2.03 | 2.04 | 4.80 | 5.62 |
| 61 | 2.13 | 2.11 | 5.38 | 6.27 | 2.13 | 2.12 | 4.91 | 5.72 |
| 62 | 2.22 | 2.17 | 5.52 | 6.39 | 2.23 | 2.20 | 5.01 | 5.81 |
| 63 | 2.30 | 2.22 | 5.64 | 6.50 | 2.35 | 2.29 | 5.10 | 5.89 |
| 64 | 2.37 | 2.26 | 5.75 | 6.60 | 2.47 | 2.39 | 5.18 | 5.96 |

Chart 23: Cost Ratio of Members with Cancer Diagnosis to Total Members – 2009-10

| Age | Male | Female | Age | Male | Female |
|-----|-------|--------|-----|------|--------|
| 0 | 4.03 | 3.76 | 65 | 1.99 | 2.07 |
| 1 | 5.82 | 5.48 | 66 | 1.94 | 2.04 |
| 2 | 9.14 | 8.69 | 67 | 1.89 | 2.01 |
| 3 | 14.45 | 14.03 | 68 | 1.84 | 1.97 |
| 4 | 18.78 | 18.76 | 69 | 1.79 | 1.93 |
| 5 | 17.43 | 17.78 | 70 | 1.75 | 1.88 |
| 6 | 13.54 | 13.95 | 71 | 1.70 | 1.84 |
| 7 | 10.50 | 10.89 | 72 | 1.65 | 1.79 |
| 8 | 8.56 | 8.91 | 73 | 1.60 | 1.75 |
| 9 | 7.28 | 7.58 | 74 | 1.54 | 1.70 |
| 10 | 6.30 | 6.52 | 75 | 1.49 | 1.66 |
| 11 | 5.46 | 5.56 | 76 | 1.45 | 1.62 |
| 12 | 4.73 | 4.68 | 77 | 1.40 | 1.57 |
| 13 | 4.11 | 3.92 | 78 | 1.35 | 1.53 |
| 14 | 3.65 | 3.33 | 79 | 1.31 | 1.48 |
| 15 | 3.34 | 2.91 | 80 | 1.26 | 1.43 |
| 16 | 3.21 | 2.66 | 81 | 1.22 | 1.38 |
| 17 | 3.24 | 2.54 | 82 | 1.17 | 1.33 |
| 18 | 3.44 | 2.52 | 83 | 1.13 | 1.29 |
| 19 | 3.77 | 2.58 | 84 | 1.08 | 1.25 |
| 20 | 4.15 | 2.63 | 85 | 1.04 | 1.21 |
| 21 | 4.47 | 2.61 | 86 | 0.99 | 1.18 |
| 22 | 4.64 | 2.52 | 87 | 0.95 | 1.15 |
| 23 | 4.64 | 2.37 | 88 | 0.91 | 1.12 |
| 24 | 4.51 | 2.21 | 89 | 0.88 | 1.09 |
| 25 | 4.31 | 2.07 | 90 | 0.84 | 1.06 |
| 26 | 4.07 | 1.96 | 91 | 0.81 | 1.04 |
| 27 | 3.85 | 1.88 | 92 | 0.78 | 1.03 |
| 28 | 3.64 | 1.83 | 93 | 0.76 | 1.02 |
| 29 | 3.45 | 1.81 | 94 | 0.74 | 1.02 |
| 30 | 3.29 | 1.82 | 95 | 0.72 | 1.03 |
| 31 | 3.15 | 1.85 | 96 | 0.71 | 1.05 |
| 32 | 3.06 | 1.90 | 97 | 0.70 | 1.09 |
| 33 | 3.01 | 1.97 | 98 | 0.69 | 1.14 |
| 34 | 2.98 | 2.05 | | | |
| 35 | 2.96 | 2.16 | | | |
| 36 | 2.94 | 2.27 | | | |
| 37 | 2.92 | 2.40 | | | |
| 38 | 2.90 | 2.53 | | | |
| 39 | 2.89 | 2.66 | | | |
| 40 | 2.90 | 2.78 | | | |
| 41 | 2.91 | 2.89 | | | |
| 42 | 2.92 | 2.98 | | | |
| 43 | 2.93 | 3.05 | | | |
| 44 | 2.94 | 3.10 | | | |
| 45 | 2.94 | 3.11 | | | |
| 46 | 2.93 | 3.11 | | | |
| 47 | 2.90 | 3.08 | | | |
| 48 | 2.85 | 3.04 | | | |
| 49 | 2.80 | 2.99 | | | |
| 50 | 2.74 | 2.94 | | | |
| 51 | 2.68 | 2.90 | | | |
| 52 | 2.65 | 2.88 | | | |
| 53 | 2.62 | 2.87 | | | |
| 54 | 2.59 | 2.86 | | | |
| 55 | 2.56 | 2.86 | | | |
| 56 | 2.53 | 2.86 | | | |
| 57 | 2.50 | 2.86 | | | |
| 58 | 2.46 | 2.84 | | | |
| 59 | 2.42 | 2.81 | | | |
| 60 | 2.37 | 2.76 | | | |
| 61 | 2.31 | 2.70 | | | |
| 62 | 2.24 | 2.64 | | | |
| 63 | 2.17 | 2.57 | | | |
| 64 | 2.10 | 2.50 | | | |

Chart 24: Cost Ratio of Members with Circulatory Diagnosis to Total Members – 2009-10

| Age | Male | Female | Age | Male | Female |
|-----|-------|--------|-----|------|--------|
| 0 | 3.53 | 5.01 | 65 | 1.47 | 1.26 |
| 1 | 4.87 | 6.94 | 66 | 1.43 | 1.24 |
| 2 | 7.28 | 10.43 | 67 | 1.39 | 1.22 |
| 3 | 10.97 | 15.92 | 68 | 1.36 | 1.21 |
| 4 | 13.63 | 20.11 | 69 | 1.34 | 1.19 |
| 5 | 12.18 | 18.08 | 70 | 1.33 | 1.18 |
| 6 | 9.23 | 13.57 | 71 | 1.32 | 1.17 |
| 7 | 7.12 | 10.28 | 72 | 1.31 | 1.16 |
| 8 | 5.91 | 8.36 | 73 | 1.30 | 1.15 |
| 9 | 5.25 | 7.25 | 74 | 1.29 | 1.15 |
| 10 | 4.86 | 6.54 | 75 | 1.28 | 1.14 |
| 11 | 4.54 | 5.97 | 76 | 1.27 | 1.14 |
| 12 | 4.22 | 5.43 | 77 | 1.26 | 1.13 |
| 13 | 3.88 | 4.91 | 78 | 1.25 | 1.13 |
| 14 | 3.57 | 4.43 | 79 | 1.24 | 1.12 |
| 15 | 3.33 | 4.06 | 80 | 1.22 | 1.10 |
| 16 | 3.19 | 3.82 | 81 | 1.21 | 1.09 |
| 17 | 3.18 | 3.73 | 82 | 1.19 | 1.07 |
| 18 | 3.29 | 3.76 | 83 | 1.18 | 1.05 |
| 19 | 3.49 | 3.86 | 84 | 1.16 | 1.04 |
| 20 | 3.69 | 3.93 | 85 | 1.15 | 1.02 |
| 21 | 3.81 | 3.87 | 86 | 1.13 | 1.01 |
| 22 | 3.77 | 3.65 | 87 | 1.12 | 1.00 |
| 23 | 3.60 | 3.33 | 88 | 1.10 | 0.98 |
| 24 | 3.35 | 2.98 | 89 | 1.09 | 0.97 |
| 25 | 3.08 | 2.64 | 90 | 1.08 | 0.97 |
| 26 | 2.83 | 2.35 | 91 | 1.07 | 0.96 |
| 27 | 2.61 | 2.11 | 92 | 1.06 | 0.96 |
| 28 | 2.43 | 1.92 | 93 | 1.06 | 0.97 |
| 29 | 2.28 | 1.76 | 94 | 1.05 | 0.98 |
| 30 | 2.16 | 1.64 | 95 | 1.05 | 1.00 |
| 31 | 2.07 | 1.55 | 96 | 1.06 | 1.03 |
| 32 | 2.01 | 1.50 | 97 | 1.07 | 1.08 |
| 33 | 1.97 | 1.46 | 98 | 1.08 | 1.14 |
| 34 | 1.94 | 1.45 | | | |
| 35 | 1.92 | 1.45 | | | |
| 36 | 1.89 | 1.46 | | | |
| 37 | 1.86 | 1.47 | | | |
| 38 | 1.84 | 1.49 | | | |
| 39 | 1.82 | 1.51 | | | |
| 40 | 1.80 | 1.52 | | | |
| 41 | 1.80 | 1.54 | | | |
| 42 | 1.80 | 1.55 | | | |
| 43 | 1.80 | 1.57 | | | |
| 44 | 1.80 | 1.58 | | | |
| 45 | 1.80 | 1.58 | | | |
| 46 | 1.80 | 1.58 | | | |
| 47 | 1.80 | 1.57 | | | |
| 48 | 1.80 | 1.55 | | | |
| 49 | 1.79 | 1.53 | | | |
| 50 | 1.78 | 1.50 | | | |
| 51 | 1.77 | 1.47 | | | |
| 52 | 1.76 | 1.45 | | | |
| 53 | 1.74 | 1.44 | | | |
| 54 | 1.72 | 1.42 | | | |
| 55 | 1.70 | 1.41 | | | |
| 56 | 1.67 | 1.40 | | | |
| 57 | 1.63 | 1.40 | | | |
| 58 | 1.60 | 1.39 | | | |
| 59 | 1.57 | 1.38 | | | |
| 60 | 1.54 | 1.37 | | | |
| 61 | 1.51 | 1.36 | | | |
| 62 | 1.48 | 1.35 | | | |
| 63 | 1.46 | 1.34 | | | |
| 64 | 1.44 | 1.33 | | | |

Chart 25: Cost Ratio of Members with Musculoskeletal Diagnosis to Total Members – 2009-10

| Age | Male | Female | Age | Male | Female |
|-----|------|--------|-----|------|--------|
| 0 | 0.52 | 0.56 | 65 | 1.25 | 1.16 |
| 1 | 0.73 | 0.79 | 66 | 1.23 | 1.14 |
| 2 | 1.10 | 1.21 | 67 | 1.20 | 1.12 |
| 3 | 1.71 | 1.91 | 68 | 1.18 | 1.10 |
| 4 | 2.21 | 2.56 | 69 | 1.15 | 1.08 |
| 5 | 2.10 | 2.51 | 70 | 1.12 | 1.05 |
| 6 | 1.73 | 2.12 | 71 | 1.10 | 1.03 |
| 7 | 1.48 | 1.87 | 72 | 1.07 | 1.02 |
| 8 | 1.38 | 1.80 | 73 | 1.05 | 1.00 |
| 9 | 1.38 | 1.86 | 74 | 1.02 | 0.98 |
| 10 | 1.43 | 1.97 | 75 | 1.00 | 0.97 |
| 11 | 1.49 | 2.06 | 76 | 0.98 | 0.95 |
| 12 | 1.52 | 2.07 | 77 | 0.96 | 0.93 |
| 13 | 1.52 | 1.99 | 78 | 0.94 | 0.92 |
| 14 | 1.50 | 1.86 | 79 | 0.93 | 0.90 |
| 15 | 1.48 | 1.74 | 80 | 0.91 | 0.87 |
| 16 | 1.49 | 1.66 | 81 | 0.89 | 0.85 |
| 17 | 1.54 | 1.62 | 82 | 0.88 | 0.83 |
| 18 | 1.64 | 1.65 | 83 | 0.86 | 0.81 |
| 19 | 1.79 | 1.71 | 84 | 0.85 | 0.80 |
| 20 | 1.94 | 1.77 | 85 | 0.84 | 0.78 |
| 21 | 2.06 | 1.79 | 86 | 0.83 | 0.77 |
| 22 | 2.12 | 1.75 | 87 | 0.82 | 0.76 |
| 23 | 2.12 | 1.66 | 88 | 0.82 | 0.75 |
| 24 | 2.08 | 1.55 | 89 | 0.81 | 0.74 |
| 25 | 2.02 | 1.45 | 90 | 0.81 | 0.73 |
| 26 | 1.96 | 1.36 | 91 | 0.81 | 0.73 |
| 27 | 1.91 | 1.29 | 92 | 0.82 | 0.73 |
| 28 | 1.87 | 1.23 | 93 | 0.82 | 0.73 |
| 29 | 1.83 | 1.18 | 94 | 0.83 | 0.75 |
| 30 | 1.79 | 1.15 | 95 | 0.84 | 0.77 |
| 31 | 1.76 | 1.13 | 96 | 0.85 | 0.80 |
| 32 | 1.74 | 1.12 | 97 | 0.87 | 0.84 |
| 33 | 1.72 | 1.12 | 98 | 0.90 | 0.91 |
| 34 | 1.71 | 1.13 | | | |
| 35 | 1.69 | 1.15 | | | |
| 36 | 1.67 | 1.18 | | | |
| 37 | 1.64 | 1.21 | | | |
| 38 | 1.62 | 1.25 | | | |
| 39 | 1.59 | 1.28 | | | |
| 40 | 1.58 | 1.31 | | | |
| 41 | 1.56 | 1.34 | | | |
| 42 | 1.55 | 1.37 | | | |
| 43 | 1.53 | 1.39 | | | |
| 44 | 1.52 | 1.41 | | | |
| 45 | 1.51 | 1.43 | | | |
| 46 | 1.50 | 1.43 | | | |
| 47 | 1.49 | 1.44 | | | |
| 48 | 1.48 | 1.43 | | | |
| 49 | 1.46 | 1.43 | | | |
| 50 | 1.44 | 1.42 | | | |
| 51 | 1.43 | 1.41 | | | |
| 52 | 1.41 | 1.40 | | | |
| 53 | 1.40 | 1.39 | | | |
| 54 | 1.38 | 1.38 | | | |
| 55 | 1.36 | 1.38 | | | |
| 56 | 1.34 | 1.37 | | | |
| 57 | 1.32 | 1.37 | | | |
| 58 | 1.31 | 1.36 | | | |
| 59 | 1.30 | 1.35 | | | |
| 60 | 1.29 | 1.34 | | | |
| 61 | 1.28 | 1.33 | | | |
| 62 | 1.27 | 1.32 | | | |
| 63 | 1.26 | 1.31 | | | |
| 64 | 1.25 | 1.30 | | | |

Chart 26: Comparison of 2010 Age Curve with Petertil Table

| Age | Male | Female | Petertil | Age | Male | Female | Petertil |
|-----|-------|--------|----------|-----|-------|--------|----------|
| 50 | 0.671 | 0.834 | 0.794 | 65 | 0.902 | 0.822 | 0.777 |
| 51 | 0.711 | 0.864 | 0.820 | 66 | 0.917 | 0.842 | 0.800 |
| 52 | 0.751 | 0.892 | 0.847 | 67 | 0.933 | 0.862 | 0.824 |
| 53 | 0.792 | 0.919 | 0.875 | 68 | 0.949 | 0.881 | 0.849 |
| 54 | 0.835 | 0.946 | 0.904 | 69 | 0.966 | 0.900 | 0.874 |
| 55 | 0.881 | 0.972 | 0.934 | 70 | 0.983 | 0.918 | 0.901 |
| 56 | 0.928 | 0.999 | 0.967 | 71 | 1.000 | 0.936 | 0.923 |
| 57 | 0.978 | 1.028 | 1.002 | 72 | 1.016 | 0.952 | 0.946 |
| 58 | 1.029 | 1.060 | 1.038 | 73 | 1.030 | 0.968 | 0.970 |
| 59 | 1.081 | 1.095 | 1.075 | 74 | 1.044 | 0.982 | 0.994 |
| 60 | 1.134 | 1.134 | 1.114 | 75 | 1.056 | 0.995 | 1.019 |
| 61 | 1.191 | 1.177 | 1.161 | 76 | 1.067 | 1.007 | 1.039 |
| 62 | 1.251 | 1.225 | 1.210 | 77 | 1.078 | 1.018 | 1.060 |
| 63 | 1.316 | 1.275 | 1.260 | 78 | 1.089 | 1.029 | 1.081 |
| 64 | 1.385 | 1.327 | 1.313 | 79 | 1.099 | 1.040 | 1.103 |
| | | | | 80 | 1.108 | 1.051 | 1.125 |
| | | | | 81 | 1.115 | 1.062 | 1.136 |
| | | | | 82 | 1.119 | 1.071 | 1.148 |
| | | | | 83 | 1.121 | 1.079 | 1.159 |
| | | | | 84 | 1.119 | 1.085 | 1.171 |
| | | | | 85 | 1.116 | 1.091 | 1.182 |
| | | | | 86 | 1.112 | 1.095 | 1.188 |
| | | | | 87 | 1.108 | 1.097 | 1.194 |
| | | | | 88 | 1.103 | 1.100 | 1.200 |
| | | | | 89 | 1.099 | 1.101 | 1.206 |
| | | | | 90 | 1.096 | 1.102 | 1.212 |
| | | | | 91 | 1.093 | 1.100 | 1.212 |
| | | | | 92 | 1.090 | 1.096 | 1.212 |
| | | | | 93 | 1.087 | 1.088 | 1.212 |
| | | | | 94 | 1.084 | 1.075 | 1.212 |
| | | | | 95 | 1.080 | 1.057 | 1.212 |
| | | | | 96 | 1.076 | 1.034 | 1.212 |
| | | | | 97 | 1.072 | 1.005 | 1.212 |
| | | | | 98 | 1.066 | 0.969 | 1.212 |

Chart 27: Individual HMO data for calendar year 2010

| Age | Raw | | Graduated | | Age | Raw | | Graduated | |
|-----|--------|--------|-----------|--------|-----|-------|--------|-----------|--------|
| | Male | Female | Male | Female | | Male | Female | Male | Female |
| 0 | 23,902 | 8,831 | 6,202 | 5,130 | 35 | 2,179 | 4,478 | 2,257 | 4,150 |
| 1 | 5,409 | 5,565 | 4,997 | 4,182 | 36 | 2,152 | 5,453 | 2,366 | 4,125 |
| 2 | 1,592 | 3,134 | 3,980 | 3,363 | 37 | 2,797 | 3,764 | 2,482 | 4,082 |
| 3 | 2,861 | 1,524 | 3,148 | 2,673 | 38 | 2,048 | 3,969 | 2,605 | 4,029 |
| 4 | 1,399 | 1,124 | 2,494 | 2,110 | 39 | 2,800 | 3,615 | 2,735 | 3,973 |
| 5 | 1,587 | 1,511 | 2,009 | 1,669 | 40 | 2,288 | 3,904 | 2,871 | 3,924 |
| 6 | 1,129 | 1,189 | 1,675 | 1,341 | 41 | 3,421 | 3,727 | 3,011 | 3,891 |
| 7 | 1,375 | 1,027 | 1,472 | 1,116 | 42 | 3,769 | 3,761 | 3,155 | 3,879 |
| 8 | 985 | 1,235 | 1,376 | 981 | 43 | 3,482 | 3,584 | 3,303 | 3,895 |
| 9 | 1,553 | 1,225 | 1,363 | 922 | 44 | 3,360 | 4,153 | 3,457 | 3,942 |
| 10 | 3,397 | 1,376 | 1,406 | 926 | 45 | 3,247 | 3,646 | 3,618 | 4,020 |
| 11 | 1,265 | 927 | 1,484 | 979 | 46 | 4,202 | 4,244 | 3,789 | 4,129 |
| 12 | 2,322 | 1,097 | 1,577 | 1,071 | 47 | 3,994 | 4,074 | 3,974 | 4,267 |
| 13 | 1,380 | 1,077 | 1,671 | 1,190 | 48 | 4,050 | 4,433 | 4,176 | 4,431 |
| 14 | 1,558 | 1,226 | 1,755 | 1,329 | 49 | 4,246 | 4,692 | 4,399 | 4,616 |
| 15 | 1,609 | 1,489 | 1,823 | 1,480 | 50 | 4,990 | 5,113 | 4,644 | 4,819 |
| 16 | 2,333 | 2,362 | 1,870 | 1,637 | 51 | 4,695 | 5,616 | 4,912 | 5,036 |
| 17 | 2,036 | 1,791 | 1,895 | 1,795 | 52 | 4,519 | 5,111 | 5,205 | 5,264 |
| 18 | 2,125 | 1,863 | 1,898 | 1,954 | 53 | 5,688 | 5,830 | 5,522 | 5,503 |
| 19 | 1,494 | 2,184 | 1,883 | 2,112 | 54 | 5,854 | 5,384 | 5,857 | 5,751 |
| 20 | 1,627 | 2,144 | 1,856 | 2,271 | 55 | 5,728 | 5,285 | 6,208 | 6,009 |
| 21 | 2,319 | 2,431 | 1,820 | 2,432 | 56 | 6,328 | 6,436 | 6,567 | 6,274 |
| 22 | 1,279 | 2,400 | 1,783 | 2,595 | 57 | 7,257 | 6,512 | 6,928 | 6,545 |
| 23 | 1,475 | 2,765 | 1,750 | 2,762 | 58 | 8,333 | 6,854 | 7,283 | 6,818 |
| 24 | 1,339 | 2,304 | 1,724 | 2,931 | 59 | 7,789 | 7,068 | 7,625 | 7,090 |
| 25 | 1,855 | 3,298 | 1,710 | 3,104 | 60 | 7,724 | 7,779 | 7,951 | 7,358 |
| 26 | 1,253 | 2,814 | 1,709 | 3,275 | 61 | 7,487 | 7,658 | 8,256 | 7,619 |
| 27 | 2,254 | 3,371 | 1,722 | 3,443 | 62 | 9,770 | 7,876 | 8,539 | 7,871 |
| 28 | 1,782 | 3,769 | 1,749 | 3,603 | 63 | 8,616 | 8,342 | 8,797 | 8,113 |
| 29 | 1,718 | 3,748 | 1,789 | 3,750 | 64 | 8,363 | 7,968 | 9,031 | 8,344 |
| 30 | 1,762 | 4,008 | 1,841 | 3,879 | | | | | |
| 31 | 2,005 | 3,985 | 1,905 | 3,987 | | | | | |
| 32 | 2,035 | 3,882 | 1,980 | 4,069 | | | | | |
| 33 | 2,394 | 4,443 | 2,064 | 4,124 | | | | | |
| 34 | 2,174 | 4,049 | 2,156 | 4,150 | | | | | |

Chart 28: Group PPO/POS data for calendar year 2010

| Age | Raw | | Graduated | | Age | Raw | | Graduated | |
|-----|--------|--------|-----------|--------|-----|--------|--------|-----------|--------|
| | Male | Female | Male | Female | | Male | Female | Male | Female |
| 0 | 14,598 | 12,706 | 12,176 | 10,363 | 35 | 2,485 | 5,125 | 2,492 | 5,121 |
| 1 | 8,461 | 7,157 | 7,718 | 6,557 | 36 | 2,585 | 5,117 | 2,606 | 5,111 |
| 2 | 2,634 | 2,215 | 4,529 | 3,833 | 37 | 2,699 | 5,089 | 2,732 | 5,098 |
| 3 | 2,091 | 1,689 | 2,565 | 2,152 | 38 | 2,900 | 5,091 | 2,867 | 5,093 |
| 4 | 1,931 | 1,642 | 1,603 | 1,323 | 39 | 3,009 | 5,061 | 3,005 | 5,103 |
| 5 | 1,835 | 1,545 | 1,304 | 1,056 | 40 | 3,169 | 5,131 | 3,143 | 5,131 |
| 6 | 1,708 | 1,394 | 1,339 | 1,073 | 41 | 3,269 | 5,208 | 3,282 | 5,170 |
| 7 | 1,609 | 1,274 | 1,472 | 1,178 | 42 | 3,390 | 5,242 | 3,424 | 5,218 |
| 8 | 1,579 | 1,259 | 1,581 | 1,269 | 43 | 3,588 | 5,245 | 3,572 | 5,273 |
| 9 | 1,532 | 1,253 | 1,637 | 1,325 | 44 | 3,738 | 5,385 | 3,729 | 5,342 |
| 10 | 1,547 | 1,260 | 1,664 | 1,367 | 45 | 3,907 | 5,393 | 3,897 | 5,431 |
| 11 | 1,644 | 1,380 | 1,704 | 1,429 | 46 | 4,110 | 5,552 | 4,081 | 5,550 |
| 12 | 1,735 | 1,503 | 1,784 | 1,539 | 47 | 4,265 | 5,718 | 4,289 | 5,703 |
| 13 | 1,817 | 1,648 | 1,911 | 1,704 | 48 | 4,487 | 5,841 | 4,527 | 5,888 |
| 14 | 2,043 | 1,844 | 2,069 | 1,914 | 49 | 4,733 | 6,080 | 4,796 | 6,101 |
| 15 | 2,214 | 2,131 | 2,216 | 2,136 | 50 | 5,159 | 6,320 | 5,089 | 6,329 |
| 16 | 2,420 | 2,381 | 2,306 | 2,329 | 51 | 5,454 | 6,691 | 5,391 | 6,554 |
| 17 | 2,423 | 2,574 | 2,305 | 2,455 | 52 | 5,693 | 6,734 | 5,696 | 6,766 |
| 18 | 2,347 | 2,687 | 2,208 | 2,502 | 53 | 5,957 | 6,872 | 6,008 | 6,970 |
| 19 | 1,912 | 2,428 | 2,045 | 2,490 | 54 | 6,347 | 7,239 | 6,334 | 7,171 |
| 20 | 1,735 | 2,358 | 1,868 | 2,469 | 55 | 6,679 | 7,361 | 6,678 | 7,373 |
| 21 | 1,705 | 2,406 | 1,719 | 2,491 | 56 | 6,985 | 7,587 | 7,040 | 7,580 |
| 22 | 1,623 | 2,554 | 1,619 | 2,588 | 57 | 7,390 | 7,787 | 7,418 | 7,800 |
| 23 | 1,584 | 2,763 | 1,572 | 2,766 | 58 | 7,947 | 8,058 | 7,805 | 8,039 |
| 24 | 1,577 | 3,054 | 1,571 | 3,011 | 59 | 8,216 | 8,292 | 8,198 | 8,303 |
| 25 | 1,629 | 3,342 | 1,604 | 3,300 | 60 | 8,477 | 8,612 | 8,602 | 8,599 |
| 26 | 1,663 | 3,617 | 1,660 | 3,609 | 61 | 9,095 | 8,834 | 9,031 | 8,928 |
| 27 | 1,772 | 3,912 | 1,729 | 3,918 | 62 | 9,423 | 9,318 | 9,488 | 9,288 |
| 28 | 1,804 | 4,203 | 1,807 | 4,211 | 63 | 10,016 | 9,774 | 9,980 | 9,670 |
| 29 | 1,833 | 4,468 | 1,895 | 4,476 | 64 | 10,507 | 9,999 | 10,505 | 10,067 |
| 30 | 1,984 | 4,704 | 1,990 | 4,701 | | | | | |
| 31 | 2,133 | 4,889 | 2,090 | 4,879 | | | | | |
| 32 | 2,201 | 5,010 | 2,189 | 5,005 | | | | | |
| 33 | 2,266 | 5,104 | 2,287 | 5,081 | | | | | |
| 34 | 2,409 | 5,094 | 2,387 | 5,116 | | | | | |