



Alaska commercial healthcare prices

Summary of provider reimbursement and related measures

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EXECUTIVE SUMMARY

This report summarizes recent commercial healthcare provider payment rates and premium costs. The commercial healthcare market includes employer-sponsored coverage and policies purchased by individuals not eligible for Medicare. Commercial provider payment levels in Alaska have long been among the highest in the nation. This report presents several data snapshots related to healthcare prices in Alaska. For the most part, we do not opine on the causes of the price relationships, nor have we attempted to prove causal relationships. Our hope is that stakeholders can use the information in this report to better understand the current cost situation in Alaska and in that way facilitate productive discussion.

This report compares Alaska with other areas around the United States. Comparison areas were targeted for inclusion based on sharing one or more characteristics with Alaska, such as being high-cost (or generally thought of as high-cost), mainly rural, remote and sparsely populated, or having some geographic proximity in the Pacific Northwest. These other areas are intended to provide interesting comparisons rather than to serve as objective benchmarks or expectation levels. Alaska certainly has unique challenges that the comparison areas do not. The comparison areas vary among the measures presented because of data availability.

In general, the data utilized for this report is detailed 2014 commercial claims data from various payers and published 2016 exchange premium rates, unless otherwise specified. This report was commissioned by Premera Blue Cross.

KEY FINDINGS

Key findings include:

- Commercial provider payment levels in Alaska are 76% higher than levels nationwide.
 - Physician payment levels are 148% higher in Alaska
 - Hospital payment levels are 56% higher
- Commercial provider payment levels have grown faster in Alaska than in comparison areas over the last five years, with the Alaska physician payment level growing by an excess of 15% and the hospital payment level by an excess of 6%. Combined this resulted in an additional 10% medical cost growth in Alaska versus the comparison areas over the five year period.
- Commercial discounts from providers' billed charges in Alaska have remained relatively unchanged in the last five years, meaning that payment rates have increased at the same rate as providers' billed charges.
- Health insurance premiums in Alaska are materially higher than in the rest of the United States. Individual health insurance premiums are more than twice as high as the premiums in 11 of the 15 markets we surveyed.
- Hospital margins in Anchorage, at 20.6%, are high relative to the nationwide average at 6.9%.
- Hospital operating costs are very high outside of Anchorage at more than two times the nationwide average, which is probably partially driven by low occupancy rates and the cost of maintaining the availability of service in remote areas.

The Results section below outlines our main findings. The subsequent Methodology section provides more detailed information on the methodology and data sources used.

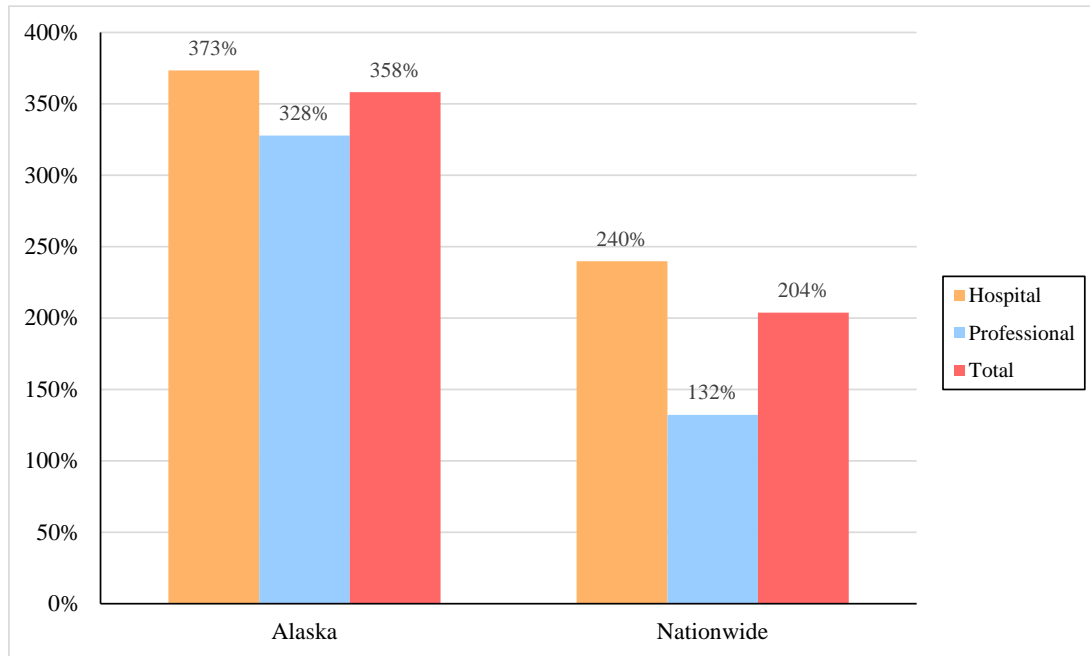
RESULTS

I. COMMERCIAL REIMBURSEMENT LEVEL

For patients who receive health insurance from their employers or directly purchase insurance from a commercial insurer, we estimate that Alaska providers are paid approximately 358% of nationwide base Medicare payment levels. This is about 1.76 times the national commercial average of 204% of nationwide base Medicare. Throughout this section we compare Alaska provider payments with nationwide base Medicare payment levels rather than local levels. We do this so that the commercial comparisons among areas are not obscured by differences in the Medicare payment level by area. The approach to the nationwide base Medicare calculation is documented in the Methodology section.

These results are on a case-mix adjusted basis, meaning that the payment differentials are not caused by health status differences in the population or by practice pattern differences. Rather, the differentials are purely payment differences for similar services.

Figure 1: 2014 Commercial Provider Payment as a Percentage of Nationwide Base Medicare



Relative to what providers are paid for commercial patients nationwide, the difference in Alaska is larger for physicians than for hospitals. Hospital payment levels in Alaska, at 373% of nationwide base Medicare, are 1.56 times the nationwide commercial average. Physician payment levels, at 328% of nationwide base Medicare, are 2.48 times the nationwide commercial average.

Exhibit 1, at the end of the report, presents detailed results for areas within Alaska and several comparison areas. The exhibit shows:

- The highest-cost comparison area, San Francisco, is roughly on par with Alaska for hospital payments (386% vs. 373% of nationwide base Medicare) but is much lower for professional (179% vs. 328% of nationwide base Medicare).
- The highest-cost comparison area for professional services is Wyoming, at 196% of nationwide base Medicare. Alaska is 67% more expensive than Wyoming ($67\% = 328\% \div 196\% - 1$).

Physician specialties

Figure 2 drills down into the professional category, showing results by specialty. It shows that orthopedics, neurosurgery, cardiology, emergency, gastroenterology, and neurology are reimbursed at more than 400% of nationwide base Medicare in Alaska. All of them, other than emergency, are reimbursed at more than 2.5 times the nationwide commercial average. In contrast, primary care physicians are reimbursed at 283% of nationwide base Medicare, but still at 2.3 times nationwide commercial. All of the specialties listed in Figure 2 are paid more than 2.0 times the nationwide commercial average.

Figure 2: 2014 Commercial Physician Payment as a Percentage of Nationwide Base Medicare

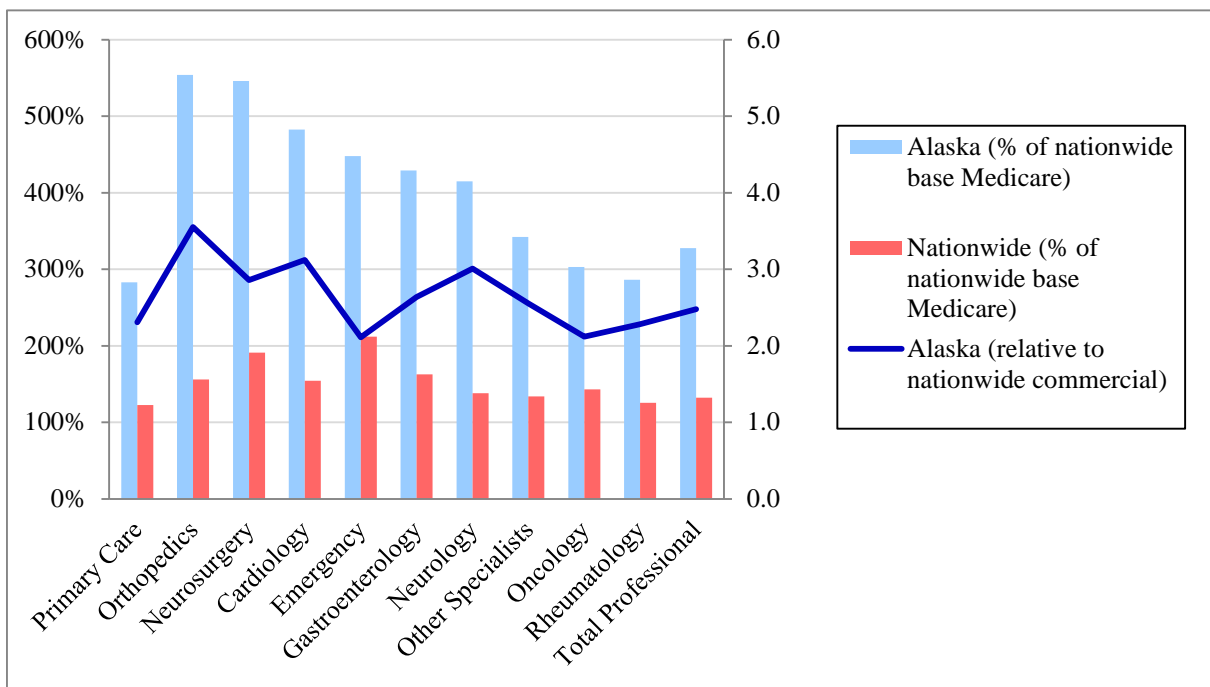


Exhibit 2 presents detailed results for the comparison areas. The exhibit shows that primary care physicians in Alaska average higher reimbursement as a percentage of nationwide base Medicare than all of the specialties in the non-Alaska comparison areas analyzed, except for neurosurgeons in New York City and Vermont and gastroenterologists in Vermont and Wyoming.

In addition to the effect of supply and demand (fewer healthcare providers results in a higher cost per service), the high professional payment rates, especially for some specialties, may be partially driven by Alaska's regulation requiring usual, customary, and reasonable (UCR) charge payments to be at least equal to the 80th percentile of charges by geographic area (the UCR payment level is applied to non-contracted providers). If a provider group has over 20% of the market share, the UCR fee schedule effectively gets set

equal to the group's billed charges. Coupled with the requirement that plans pay non-contracted providers directly rather than paying the patient (provided the patient has agreed to this), saving the doctor from having to collect from the patient, the regulation limits physicians' incentives to contract with preferred provider organization (PPO) networks at discounted rates.

Later in this report, we use publicly available data to better understand the components of Alaska hospital payment levels: margins and operating costs. Analogous data for professional services are not readily available. Conceptually though, Alaska professional reimbursement levels must compensate for above national average cost of nurses, support staff, and practice expenses, along with the above average cost of living in Alaska, with the difference between the higher reimbursement and the higher costs impacting physician compensation. The payer mix among commercial, Medicare, and Medicaid is also an important consideration, with the public payers reimbursing significantly less than the commercial payers.

Specific physician procedures

Figures 3, 4, and 5 report physician average billed and commercial allowed amounts for three common procedures: an emergency room visit, a colonoscopy with biopsy, and a knee replacement. The graphs are sorted in descending order of average allowed amount.

Figure 3: Physician Emergency Room Visit (procedure 99284), Average Unit Cost

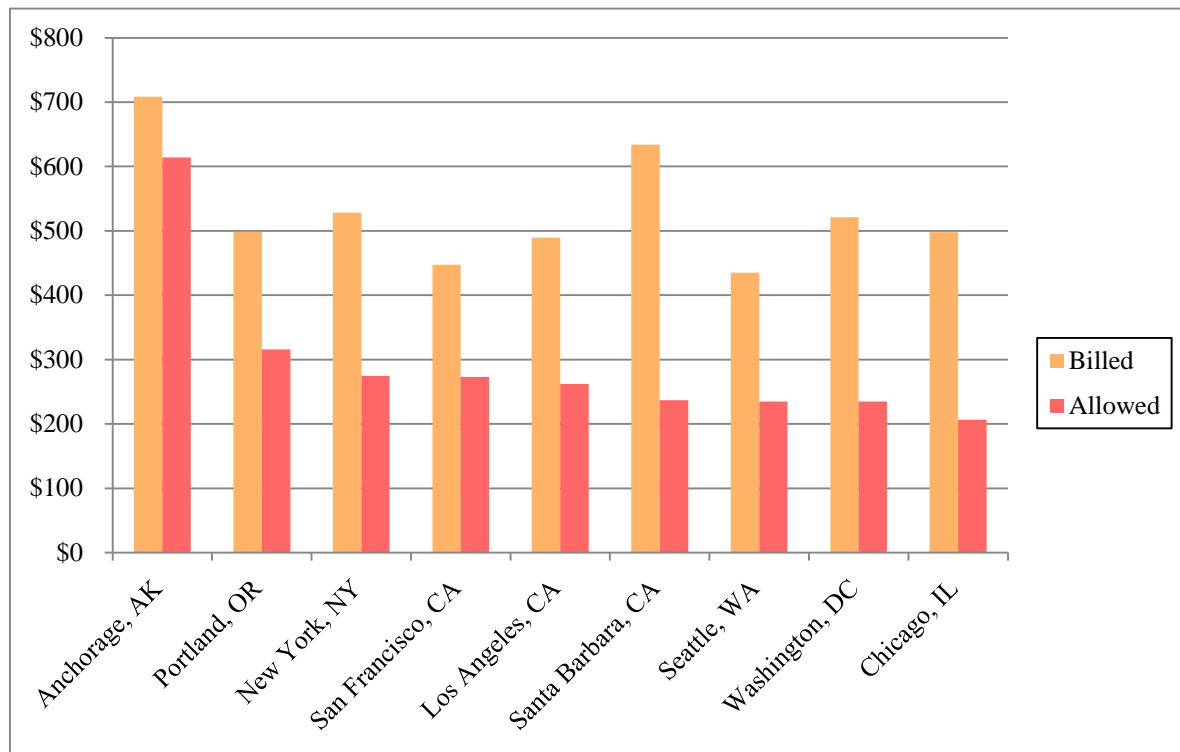


Figure 4: Physician Colonoscopy with Biopsy (procedure 45380), Average Unit Cost

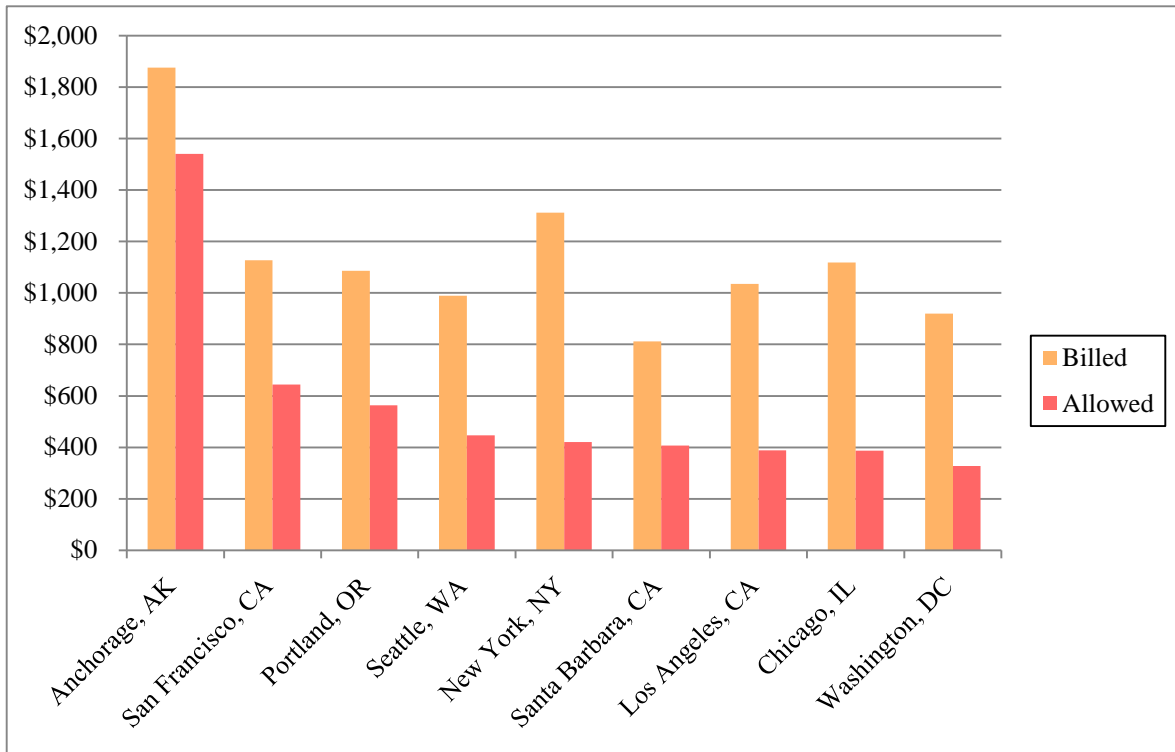
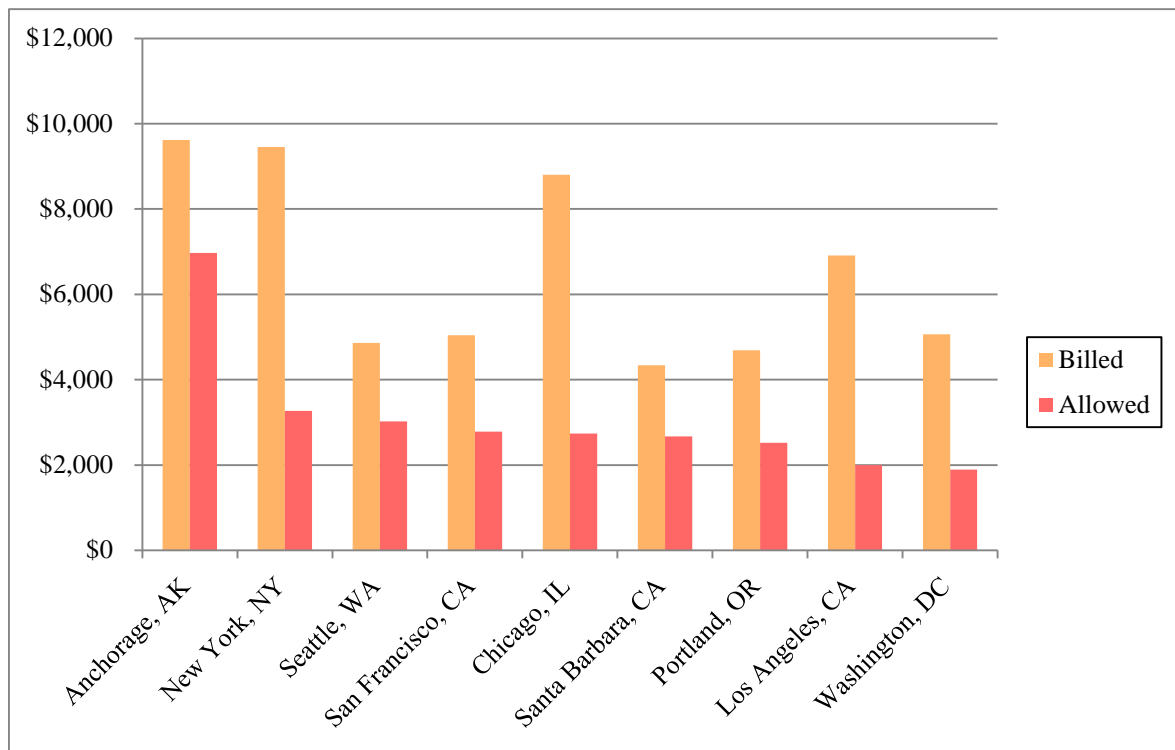


Figure 5: Physician Knee Replacement (procedure 27447), Average Unit Cost



The graphs show that while billed charges in Anchorage are the highest of the comparison areas, the commercial allowed amounts per procedure are higher in Anchorage by an even wider margin. That is, the high Anchorage commercial allowed amounts are a result of higher billed charges than elsewhere coupled with lower discounts than elsewhere.

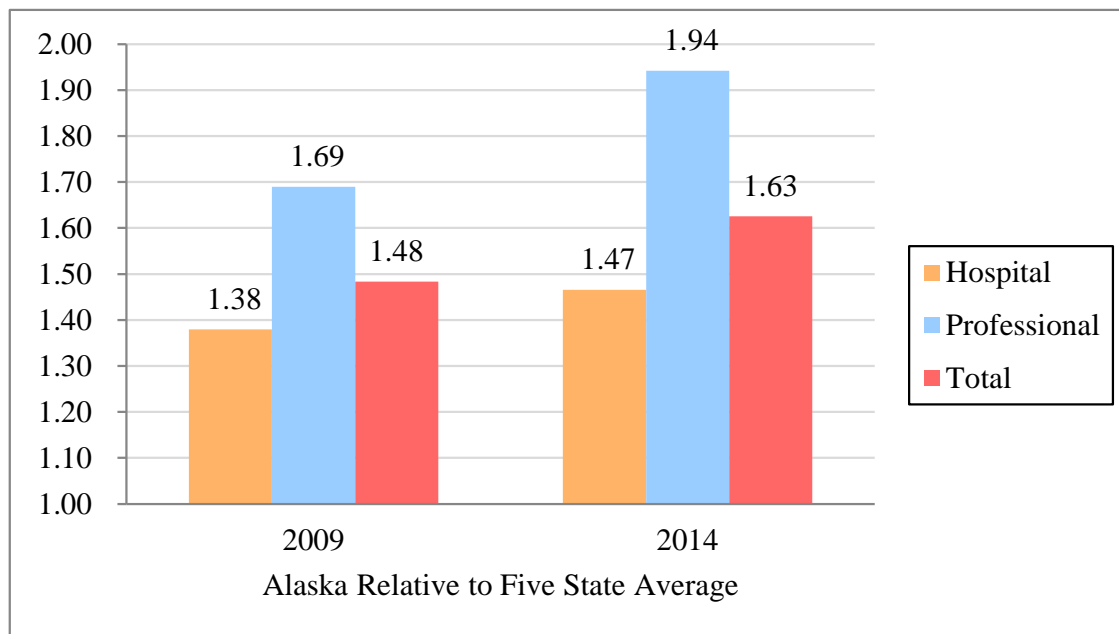
Exhibits 3, 4, and 5 present the details.

Change over time

In 2011, Milliman authored a series of reports¹ on Alaska healthcare costs commissioned by the Alaska Health Care Commission. Those reports were more comprehensive than this current report, which focuses only on commercial costs, but some measures are consistent between them and can therefore serve as a source to review the change over time. Even on comparable measures, the data sources have evolved over time and therefore are not perfect apples-to-apples comparisons (for example the payer mix has likely shifted somewhat in our claims data sources), but we think they are still informative.

The earlier reports generally compared Alaska with a five-state benchmark composed of Idaho, North Dakota, Oregon, Washington, and Wyoming. To facilitate comparison, we have summarized the same five-state benchmark in this current work. Figure 6 shows the ratio of Alaska commercial reimbursement to the five comparison states. Overall, Alaska commercial provider reimbursement increased from 1.48 times the five-state benchmark to 1.63 times, about a 10% expansion ($10\% = 1.63 \div 1.48 - 1$) in the 2009 to 2014 time frame. The increase is driven by professional services, which increased from 1.69 times the benchmark to 1.94 times, an expansion of about 15%. The hospital relationship increased from 1.38 times the benchmark to 1.47 times, an expansion of about 6%.

Figure 6: Commercial Reimbursement Relativities, 2009 vs. 2014



¹ Alaska Health Care Commission (November 2011). Download reports: Physician Payment Rates in Alaska and Comparison States; Facility Payment Rates in Alaska and Comparison States; and Drivers of Health Care Costs in Alaska and Comparison States. Retrieved September 1, 2016, via <http://dhss.alaska.gov/ahcc/Pages/focus/healthcarecosts.aspx>.

Discounts

Discounts are a poor indicator for comparing payment levels across providers because billed charge levels vary significantly from one provider to the next. However, discounts can shed light on the relative negotiating leverage between the provider and the health plan. When the provider has more negotiating power, discounts are lower, and vice versa. Figure 7 compares professional discount levels in Alaska with those in select comparison areas.

Figure 7: Commercial Professional Discounts

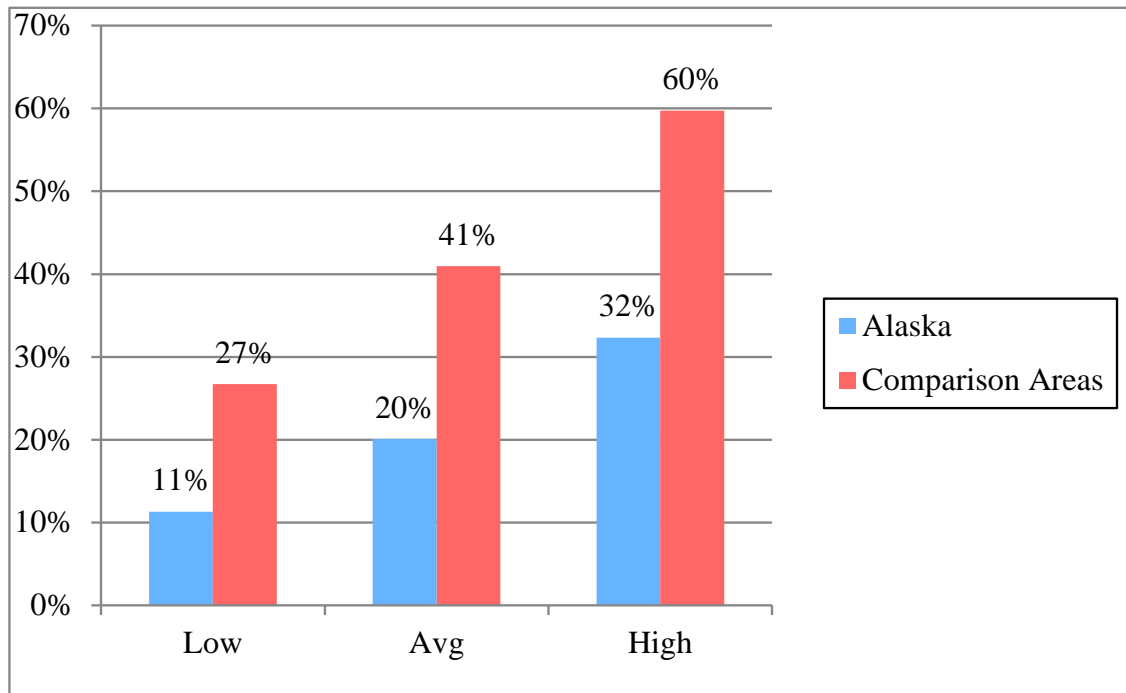


Figure 7 shows that average commercial professional discounts in Alaska are approximately one-half of those in the comparison markets, suggesting greater negotiating leverage for providers in Alaska. The comparison areas are Chicago, Honolulu, Los Angeles, New York City, Portland (Oregon), San Francisco, and Seattle. These were the areas from our broader comparison area list for which we had credible discount data. We point out that discounts do vary considerably geographically, and it is not unusual for discounts to be lower in more rural areas. Thus, while the comparison here is intended to be illustrative rather than definitive, the Alaska discounts are quite low relative to others that we have seen.

Our earlier 2011 report, “Drivers of Health Care Costs in Alaska and Comparison States,” showed average professional discounts in Alaska at 20%, identical to our current finding. That indicates that the payment level has increased by the same rate at which providers have increased their billed charges. Again, this may be related to the Alaska 80th percentile UCR regulation that reduces providers’ incentives to agree to discounted rates by requiring health insurance carriers to pay billed charges 80% of the time. As billed charges increase, commercial UCR reimbursement rates go up commensurately. Elsewhere, discounts have tended to increase over time, as contractual rate increases were lower than billed charge increases.

II. MEDICARE REIMBURSEMENT

In the prior section, we compared commercial reimbursement across areas by expressing the commercial rates as a percentage of a nationwide base Medicare fee schedule. We used the same nationwide base Medicare fee schedule for all areas in order to simplify the commercial comparisons, with each area measured against the same yardstick, so to speak.

In reality, Medicare payment rates vary by area for several reasons. Under Medicare's prospective payment system (PPS), Medicare payment rates to each hospital include geographic adjustments. Many inpatient hospitals receive additional disproportionate share hospital (DSH), uncompensated care (UCC) and indirect medical education (IME) payments. Critical access hospitals (CAHs) are reimbursed based on their own costs, which generally results in higher reimbursement than under Medicare PPS. Alaska has a higher percentage of CAHs relative to the rest of the country, which is due to the more rural nature of the state. Professional services are adjusted by Geographic Practice Cost Indices (GPCIs).

Understanding Medicare payment relativities is helpful to gain a better understanding of providers' complete financial picture. Exhibit 6 presents the local Medicare payment levels relative to actual nationwide for the comparison areas. All Medicare values in this section include the impact of CAH, DSH, UCC, IME, outlier and all other actual Medicare payments. The exhibit shows:

- Alaska has the highest ratio, at 129% of nationwide. Note that the Medicare payment area relationship (1.29 for Alaska) is much less extreme than the commercial relationship (1.76 for Alaska).
- Medicare professional reimbursement is about 21% higher in Alaska than nationwide. This is driven largely by the geographic adjustments in the Medicare physician fee schedule. In addition to the higher Medicare physician fee schedule reimbursement rates, professionals in Alaska may receive additional bonuses for working in a federally designated Health Professional Shortage Area (HPSA). Such bonuses are not reflected in Exhibit 6.
- Overall, Medicare hospital reimbursement is 33% higher in Alaska than nationwide. The highest payments are outside of Anchorage, driven by the CAHs.

III. COMMERCIAL PREMIUMS

Small businesses and individuals in Alaska pay higher premiums than those in most other parts of the country. Figures 8 and 9 show 2016 premium rates for the second-lowest-cost silver plan on the Small Business Health Options Program (SHOP) exchange and on the individual exchange. The premium amounts are for a 35-year-old.

Figure 8: 2016 Small Group SHOP Age 35 Member Premium, Second-Lowest-Cost Silver Plan

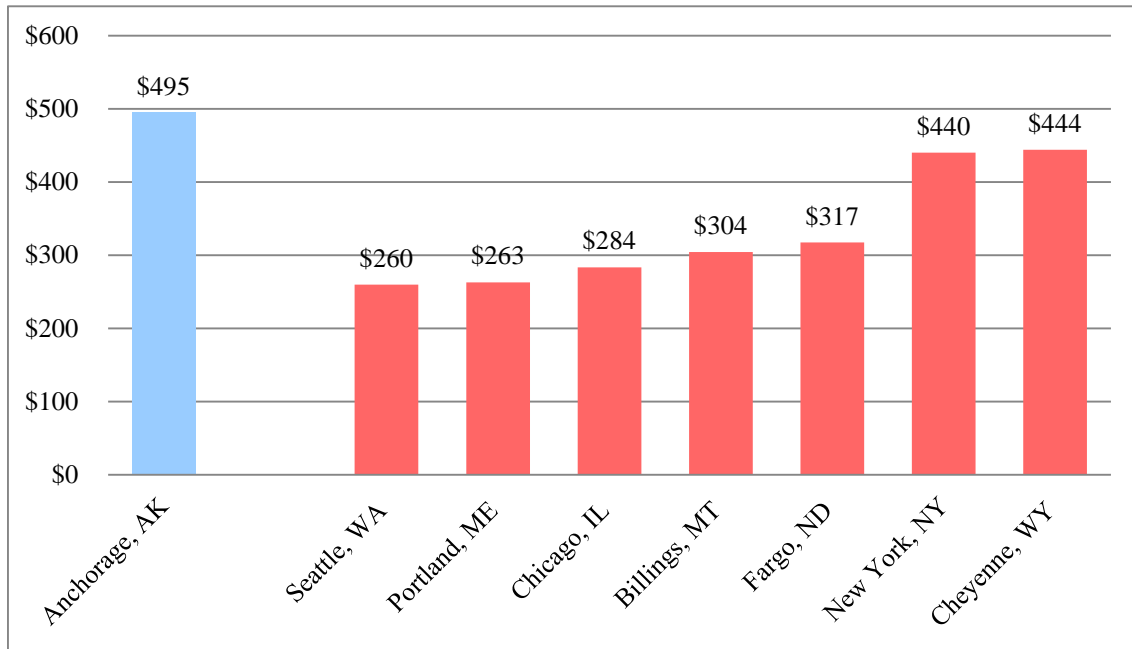


Figure 9: 2016 Individual Exchange Age 35 Member Premium, Second-Lowest-Cost Silver Plan



Exhibits 7 and 8 provide more information, especially for individual plans, where more comparison areas are included.

As shown above and in the exhibits, premium rates in Alaska are higher than the comparison areas.

We include SHOP premiums for small group because they are readily available and reasonably comparable across areas since each metal-level requires approximate benefit consistency, but we note in general there is very little enrollment in SHOP plans. However, the premium levels should be representative of ACA small group business because carriers must price consistently on and off SHOP. Thus, while we include the SHOP results in order to provide some group premium information, the reader should be cautious about drawing conclusions based on these results alone.

There is certainly more enrollment in individual exchange plans, but the premium relationships among areas can be fairly extreme, depending on which health plans participate, among other factors. Alaska individual premiums are more than twice as high as many of the comparison areas.

In earlier work, we were able to use different data sources and estimated 2010 large group premiums to be approximately 30% to 35% higher in Alaska than nationwide. This seems to be very roughly consistent with the 2016 SHOP results, above. We think the individual market is probably a special case, and not representative of the group premium differential.

While we think there are quirks with the data sources and populations that make drawing conclusions on premium levels tricky, it seems clear that premium rates in Alaska are materially higher than in most areas.

IV. HOSPITAL FINANCIAL PERFORMANCE

Hospital margins

Hospital margins in Alaska are generally higher than those in the rest of the country. Within Alaska, hospital margins in Anchorage are the highest. Figure 10 compares hospital margins for fiscal years 2012 through 2014 by area. Because margins often vary significantly from year to year, we compare a three-year average margin. The margins shown in the chart are total margins, which include nonoperating results such as investment income along with operating results.

Figure 10: Hospital Margins by Area, FY 2012 to FY 2014 Average

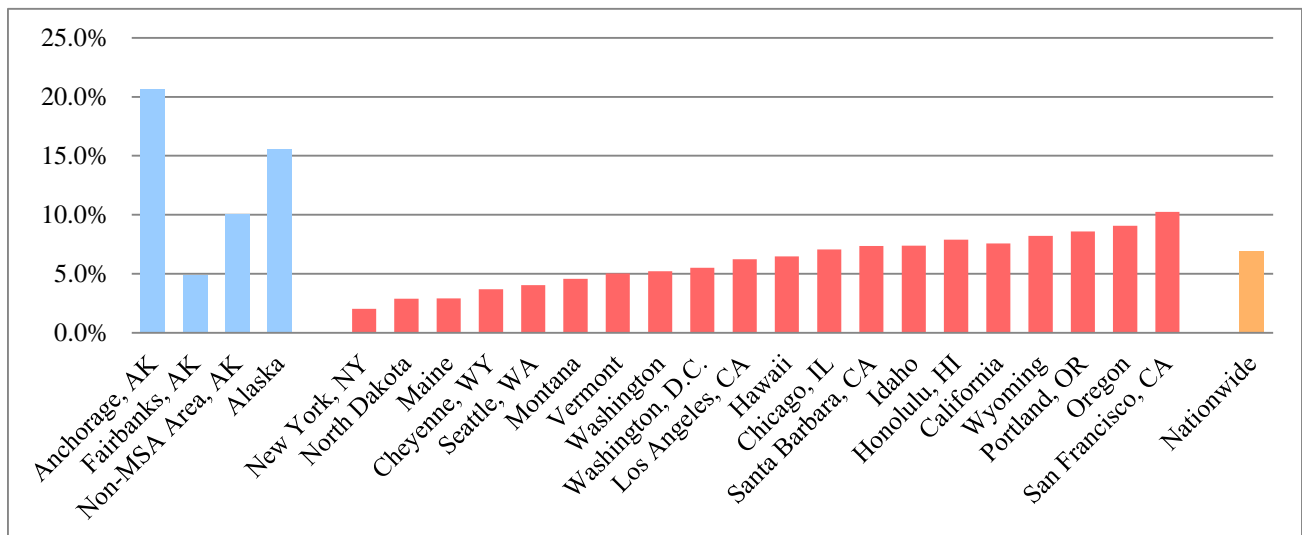


Figure 10 shows the Alaska average at 15.6% comes in about five points higher than San Francisco, which is the highest of the comparison areas at 10.3%. Anchorage facilities lead the pack with a 20.6% margin. Alaska hospitals outside of Anchorage are consistent with the high end of the comparison areas.

Exhibit 9 provides more details, including the underlying margins by year. The exhibit also shows hospital operating margins on Medicare business. The exhibit shows:

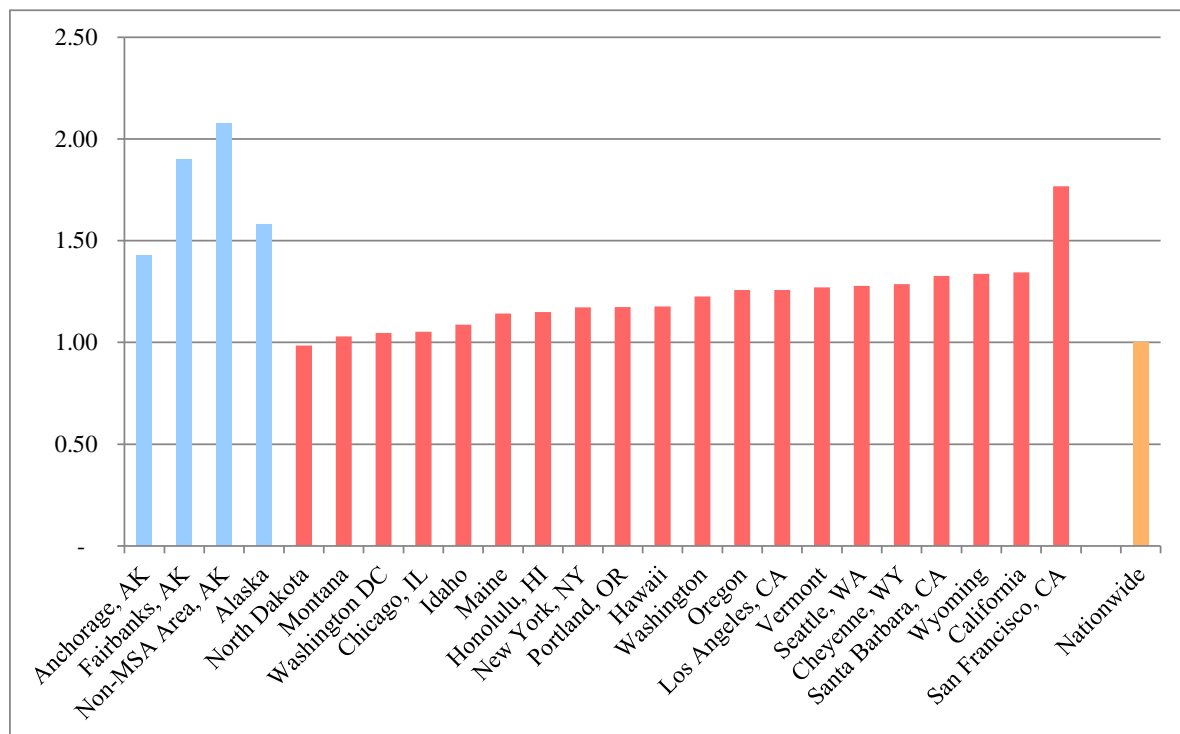
- Margins in Alaska were fairly consistent over the three years.
- Medicare operating margins in Alaska were quite negative, at an average of -18.1%. This is among the worst of the comparison areas. It is somewhat surprising that the hospitals outside of metropolitan statistical areas (MSAs) show such negative Medicare operating margins, given that so many of them are CAHs and therefore paid based on their costs. The driver of these negative amounts at the CAHs is losses on swing beds and skilled nursing facilities (SNFs); they earned a 1% margin on core inpatient and outpatient services.

Compared with our earlier 2011 report, overall hospital margins have grown in Alaska. That report showed Alaska average total margins in the range of 8.8% to 13.8% in 2008 through 2010. The analogous values in this report, from 2012 through 2014, are 14.7% to 16.1%. From 2008 to 2014, Anchorage hospital margins increased from 9.9% to 20.8%.

Hospital operating costs

Adjusting for case mix, hospitals in Alaska have 58% higher operating costs than the nationwide average. Figure 11 compares overall hospital operating cost levels on a case-mix adjusted basis between Alaska and select comparison areas. Exhibit 10 provides additional details.

Figure 11: 2014 Hospital Operating Costs by Area, Relative to Nationwide



As shown above, hospitals in Anchorage generally have the lowest operating costs in the state, with significantly higher costs at the more remote hospitals. Anchorage cost levels are roughly consistent with the upper end of the comparison group, and below San Francisco, which is a high outlier in the comparison group.

One contributor to the high costs outside of Anchorage is the low occupancy rate. Exhibit 11 presents occupancy rates for the comparison areas. The exhibit shows:

- Occupancy rates in Anchorage are similar to those in several of the comparison areas, and higher than the nationwide average.
- Occupancy rates in Alaska outside of Anchorage are the lowest among the comparison areas.
- The occupancy rate has increased in Anchorage in recent years, while the rate has decreased in the rest of the state. From our earlier report, Anchorage occupancy rates in 2008 to 2010 were in the 53% to 56% range and grew to the 61% to 67% range in 2012 to 2014. Outside of Anchorage, occupancy was around 38% to 40% in the earlier period and is 34% to 36% now.

METHODOLOGY

For this report, we define provider reimbursement to be the full amounts that providers may collect for a given service, commonly called “allowed amounts.” These allowed amounts include member-paid amounts such as copays, coinsurance, and deductibles, as well as payments from the insurer (or government entity).

I. COMMERCIAL REIMBURSEMENT LEVEL

Percentage of nationwide base Medicare

Nationwide base Medicare provides a consistent measure for benchmarking commercial reimbursement. Medicare fee schedules reflect service intensity, so using a percentage of Medicare measure helps adjust for case-mix differences.

Results are based on the 2014 Truven Health Analytics MarketScan® commercial claims database, which includes payments for employees, early retirees, and dependents. The underlying claims data is for large employer plans and is collected from approximately 100 different insurance companies and third-party administrators. The claims included were limited to those paid on a fee-for-service basis. Both in-network and out-of-network claims were included. The area summaries are based on the patient’s place of residence.

MarketScan is comprised of multiple contributors. Certain service categories were excluded for some contributors based on a review of the contributor coding by service category. Examples include:

- Inpatient claims where the International Classification of Diseases (ICD) coding was not complete enough for diagnosis-related group (DRG) assignment.
- Hospital and office injectable drugs because the unit coding was not sufficient to accurately reprice the results.
- Professional results for a subset of contributors where Healthcare Common Procedure Coding System (HCPCS) and modifier were not reliably populated.
- Inpatient maternity claims where the contract identifications were not populated consistently enough to reliably match delivery claims with baby claims.

The nationwide base Medicare payments for 2015 were used to provide a consistent denominator for all areas. Medicare adjusts payments based on wage and other cost information by geographic area, pays some providers in rural areas based on their costs, and makes outlier payments for large claims. Additionally, Medicare makes adjustments to inpatient payments for an indigent patient and uncompensated care burden and for medical education. We have used a base nationwide Medicare schedule, so these adjustments are not reflected. Additionally, no reduction was made to the Medicare allowed amounts for sequestration.

We chose to benchmark against the national base Medicare reimbursement so that the commercial reimbursement levels are directly comparable across areas. For example, Exhibit 1 shows Alaska to be 76% higher than nationwide; this truly means the commercial payment level is 76% higher. Another common benchmarking approach is to use area-adjusted Medicare reimbursement values as the denominator, and express commercial payment levels in each area as a percent of Medicare in the same area. Such an approach has an advantage in that most providers are very aware of the local Medicare payment levels and so expressing commercial values as a percentage of these is inherently meaningful to providers. However, using area-adjusted Medicare reimbursement has the significant drawback of obscuring the true difference in commercial payment levels, since in order to make comparisons across areas one must also adjust for Medicare payment level differences by area. We chose to primarily benchmark against national base Medicare reimbursement in order to make the commercial reimbursement relationships transparent.

We separately show the actual area-adjusted Medicare reimbursement relationships by area in Exhibit 6, so that the reader can understand the actual variation in Medicare reimbursement. For example, Exhibit 6 shows that the Medicare payment level in Alaska is 29% higher than the nationwide average Medicare payment level, whereas Exhibit 1 shows that commercial payment in Alaska is 76% higher than the nationwide average commercial payment level.

Additional Medicare repricing methodology information is outlined below.

- Nationwide 2015 PPS payment rates and methodology were used for all providers, including non-PPS providers (critical access hospitals, cancer hospitals, and children's hospitals).
- Medicare's inpatient maternity payments are based on the disabled population. Additionally, the Medicare Severity (MS)-DRGs are not refined for maternity services (e.g., neonates). Therefore, in the repricing, we:
 - Base maternity payments on the TRICARE relativities, rolled up to the MS-DRG level.
 - Use per diems for neonatal services, because MS-DRGs are not refined and the length of stay varies significantly by MS-DRG.
- Medicare inpatient case rates are based on a Medicare population's average length of stay (LOS). With the exception of maternity (see bullet above), no adjustment was made for the LOS differences between commercial and Medicare patients.
- Inpatient new technology payments are not included. The impact of these payments varies from year to year, but is generally very small (i.e., less than 1%).
- Inpatient rehabilitation and psychiatric hospital claims are priced using inpatient PPS (IPPS) rather than the rehab PPS and psychiatric PPS schedules.
- Professional ancillary services (ambulance, durable medical equipment, home health, etc.) are excluded from the exhibits.
- There are a number of professional services that Medicare does not cover for statutory reasons, but for which Medicare publishes relative value units (RVUs). In general, we priced these services using the published RVUs.
- Medicare employs claims edits to deny payment for certain professional services. We assumed all professional services with a positive allowed amount were accepted for payment and included these services in the repricing analysis.

- No physician incentive payment adjustments are included, such as those under the Electronic Prescribing (eRx) Incentive Program, the Physician Quality Reporting System (PQRS), the Maintenance of Certification Program (MOC), or the Primary Care Incentive Payments (PCIP) program.
- Medicare makes additional payments for professionals in HPSAs. These payments are not incorporated.

The specialist level drill-down used the same approach as the broader analysis.

The specific physician procedure codes were selected as examples of common procedures. The commercial allowed amounts come from proprietary claims databases. The billed amounts come from these same databases, supplemented with Medicare 5% Sample claims data (as the billed charge for a given procedure does not vary by patient type). We excluded both low and high outliers before calculating the average unit costs. We limited the evaluation to services performed in the facility setting and service lines without price-affecting modifiers.

Discounts

The data used to develop the discount analysis is from a Milliman proprietary claims database, using in-network claims primarily incurred in years 2012 through 2014. The data comes from several different payers, including many large national payers. There are no Blue Cross Blue Shield claims in the data; we confirmed that the data volume should produce credible results in all areas, despite having no BCBS data.

The discount is calculated as one minus the allowed amount divided by the billed charge.

The discount values presented for the comparison areas reflect the lowest discount area, an unweighted average across the comparison areas, and the highest discount area for the low, average, and high values, respectively.

II. MEDICARE REIMBURSEMENT

Medicare adjusts payments based on wage and other cost information by geographic area and pays some providers in rural areas based on a function of their costs.

The Medicare relativities were developed based on Medicare's published 2015 fee schedules for IPPS, outpatient PPS (OPPS), and the physician fee schedules (resource-based relative value scale [RBRVS] and ancillary fee schedules). Adjustments for non-PPS providers were made based on the relationships between base Medicare payment levels and the actual payments made to non-PPS providers in the 2014 Medicare fee-for-service claims data.

III. COMMERCIAL PREMIUMS

We utilized the published 2016 premium rates for state healthcare exchanges. We summarized individual and small group SHOP premium rates for a 35-year-old member. Premium data was not available for many areas, so our results only show premium costs for a limited subset of the comparison areas.

The exhibits show two comparisons: the second-lowest-cost silver plan in the area and the lowest-cost silver Blue Cross Blue Shield (BCBS) plan. We selected the second-lowest-cost silver plan in each state because this plan determines the individual premium tax credits and is generally considered an important indicator of the premium costs in an area. We selected the lowest-cost BCBS silver plan because this provides additional consistency in the type of carrier offering the health insurance plan. In some areas, low-cost plans with limited

networks have effectively underpriced the competition, especially in the individual market. Our goal by showing the two approaches is to present a better perspective of the overall level of premiums in the area.

Silver plans are restricted to having actuarial values (AVs) between 68% and 72%. Thus, limiting to silver plans removes some benefit variance from the comparison. However, there can still be significant benefit variations among silver plans, variations that can drive pricing far more than the 4% range suggested by the AV restriction. We have not attempted to normalize for these benefit design differences.

Also, by using individual and small group ACA results, the premium comparison misses the large group segment of the population (along with small group transitional business). For this reason, we recommend that the premium levels in this report be interpreted with caution. We think it is clear premiums are significantly higher in Alaska, but it would not be appropriate to infer the magnitude of the difference for large group business, for example, from the information presented in this report.

IV. HOSPITAL FINANCIAL PERFORMANCE

Hospital margins

Hospital total margins and Medicare operating margins are helpful for understanding hospital performance and financial pressures. The margin is its gain/loss divided by revenue for a particular time period. To calculate the all-payer total margin and the Medicare operating margin (for Medicare patients only) for each area, we used data from the Medicare cost reports, based on each hospital's fiscal year.

For total margins, values were sourced from the G series of the Medicare cost reports. These results include both operating and nonoperating revenue and expense amounts.

For the Medicare operating margins, revenue amounts were sourced from the E series of the Medicare cost reports and expenses from the D series. They are limited to operating revenue and expenses and do not include nonoperating income (such as investment income) or expenses. The Medicare expenses are limited to Medicare allowable expenses. Thus, the financial bases of the two margins are different.

Federal government facilities are generally excluded from the analysis because they do not file Medicare cost reports.

Hospital operating costs

We calculated the case-mix adjusted hospital operating cost relationships using data from the Medicare cost reports, publicly released Medicare claims files, and Milliman's RBRVS for Hospitals™.

The inpatient results are based on analysis of the publicly available FY 2014 Medicare Provider Analysis and Review (MedPAR) file. The outpatient results are based on analysis of the publicly available 2014 Medicare Standard Analytic File (SAF), which contains 100% of Medicare fee-for-service (FFS) facility claims. For each hospital, we used the cost-to-charge ratio from the CMS 2014 Medicare Inpatient Provider Specific (IPPSF) file when available, and otherwise directly from 2014 Medicare cost reports. We then calculated a cost amount for each service as the billed charges times the cost-to-charge ratio.

We assigned RBRVS for Hospitals RVUs to both the inpatient and outpatient claims data. Lastly, we divided the sum of cost amounts by the sum of RVUs. We did this for the total of all hospital services, as well as separately for inpatient and outpatient services. The total cost amount divided by the total RVUs results in a conversion factor. The application of the RVUs provides the case-mix and severity adjustment, such that the conversion factors can be compared directly at whatever level of aggregation is desired.

Hospital occupancy

The occupancy rate equals occupied bed days divided by total available bed days for a hospital. These rates show the percentage of staffed beds that are occupied, as reported in the Medicare cost reports. All else equal, higher occupancy rates lead to lower operating costs per admission; the fixed expense, such as building and equipment, will not vary as the occupancy rate fluctuates, but the revenue earned from occupied beds will help to offset those expenses. The exhibit includes only acute care hospitals (including critical access facilities) but excludes sub-providers (i.e., distinct psychiatric and rehab units) within those facilities.

LIMITATIONS AND CONSIDERATIONS

Any opinions expressed in this report are solely those of the authors.

Any reader of this report must possess a certain level of expertise in areas relevant to this analysis to appreciate the significance of the approaches and assumptions and the impact of these approaches and assumptions on the results. This report was prepared at the request of Premera Blue Cross and should only be considered in its entirety. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this report. Milliman recommends that any recipient of this report be aided by its own actuary or other qualified professional when reviewing the report. This report is intended solely for educational purposes and presents information of a general nature. It is not intended to guide or determine any specific individual situation and persons should consult qualified professionals before taking specific actions. Neither the authors, nor Milliman, shall have any responsibility or liability to any person or entity with respect to damages alleged to have been caused directly or indirectly by the content of this report.

As documented in the report, this analysis has relied extensively on historical data. The data were reviewed for reasonableness, but no independent audits were performed. Should errors or omissions be discovered in the source data, the results of our analysis may need to be modified. Future results will differ from the historical estimates in this report.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. We are members of the American Academy of Actuaries and meet the qualification standards for performing the analyses in this report.

Exhibit 1
2014 Commercial Reimbursement Levels by Area

<i>State/MSA</i>	% of Nationwide Base Medicare ¹					Relativity to Nationwide		
	<i>Hospital</i>			<i>Professional</i>	<i>Total</i>	<i>Hospital</i>		
	<i>Inpatient</i>	<i>Outpatient</i>	<i>Total</i>			<i>Total</i>	<i>Professional</i>	<i>Total</i>
Anchorage, AK	403%	383%	391%	343%	375%	1.63	2.60	1.84
Fairbanks, AK	363%	316%	334%	302%	323%	1.39	2.28	1.59
Non-MSA, AK	338%	375%	360%	313%	345%	1.50	2.37	1.69
Alaska	377%	371%	373%	328%	358%	1.56	2.48	1.76
<i>Comparison Areas:</i>								
Washington DC	238%	226%	230%	128%	196%	0.96	0.97	0.96
North Dakota	248%	183%	209%	180%	199%	0.87	1.36	0.98
Hawaii	270%	218%	238%	129%	202%	0.99	0.97	0.99
Honolulu, HI	269%	221%	240%	126%	202%	1.00	0.95	0.99
Idaho	233%	230%	231%	149%	203%	0.96	1.13	1.00
Seattle, WA	292%	217%	246%	147%	213%	1.03	1.11	1.05
Chicago, IL	212%	282%	255%	131%	213%	1.06	0.99	1.05
Los Angeles, CA	297%	255%	272%	124%	222%	1.13	0.94	1.09
Washington	291%	244%	263%	147%	224%	1.09	1.11	1.10
Maine	267%	278%	274%	130%	226%	1.14	0.99	1.11
New York, NY	298%	256%	273%	137%	227%	1.14	1.04	1.11
Montana	260%	267%	264%	161%	230%	1.10	1.22	1.13
Portland, OR	261%	264%	263%	166%	230%	1.10	1.25	1.13
California	323%	277%	295%	136%	242%	1.23	1.03	1.19
Vermont	242%	317%	287%	157%	244%	1.20	1.18	1.20
Oregon	282%	284%	283%	171%	246%	1.18	1.30	1.21
Cheyenne, WY	278%	330%	310%	161%	260%	1.29	1.22	1.27
Wyoming	291%	291%	291%	196%	259%	1.21	1.49	1.27
Santa Barbara, CA	410%	284%	334%	123%	263%	1.39	0.93	1.29
San Francisco, CA	410%	370%	386%	179%	316%	1.61	1.35	1.55
Nationwide	239%	241%	240%	132%	204%	1.00	1.00	1.00

¹All areas are evaluated relative to base Medicare fee schedules and do not include area adjustments. Thus the relationships shown are pure commercial payment level differences.

Exhibit 2
2014 Commercial Reimbursement Levels by Specialty and Area

% of Nationwide Base Medicare ¹											
<i>State/MSA</i>	<i>Primary Care</i>	<i>Orthopedics</i>	<i>Neurosurgery</i>	<i>Cardiology</i>	<i>Emergency</i>	<i>Gastroenterology</i>	<i>Neurology</i>	<i>Other Specialists</i>	<i>Oncology</i>	<i>Rheumatology</i>	<i>Total Professional</i>
Anchorage, AK	291%										343%
Fairbanks, AK	256%										302%
Non-MSA, AK	281%										313%
Alaska	283%	554%	546%	483%	448%	429%	415%	342%	303%	286%	328%
Relative to Nationwide Commercial	2.3	3.6	2.9	3.1	2.1	2.6	3.0	2.6	2.1	2.3	2.5
<i>Comparison Areas:</i>											
Santa Barbara, CA	112%	136%	141%	150%	174%	144%	116%	120%	119%	134%	123%
Los Angeles, CA	119%	144%	226%	141%	227%	139%	120%	124%	141%	109%	124%
Honolulu, HI	110%	N/A	N/A	N/A	N/A	N/A	N/A	131%	N/A	N/A	126%
Washington DC	121%	160%	167%	151%	169%	149%	129%	131%	162%	149%	128%
Hawaii	113%	138%	144%	135%	144%	160%	124%	133%	141%	120%	129%
Maine	121%	145%	156%	154%	153%	146%	148%	132%	160%	153%	130%
Chicago, IL	120%	162%	179%	157%	174%	159%	144%	133%	144%	160%	131%
California	130%	150%	206%	162%	211%	166%	142%	136%	156%	126%	136%
New York, NY	119%	190%	370%	147%	222%	132%	126%	146%	156%	119%	137%
Washington	154%	181%	167%	168%	211%	189%	164%	140%	163%	155%	147%
Seattle, WA	155%	194%	169%	169%	206%	192%	171%	141%	168%	160%	147%
Idaho	146%	181%	184%	153%	163%	198%	166%	146%	153%	149%	149%
Vermont	138%	199%	299%	238%	187%	301%	219%	160%	212%	196%	157%
Montana	157%	179%	184%	183%	234%	186%	165%	159%	161%	172%	161%
Cheyenne, WY	142%	191%	N/A	N/A	N/A	N/A	N/A	171%	N/A	N/A	161%
Portland, OR	166%	188%	189%	182%	231%	240%	187%	159%	181%	178%	166%
Oregon	172%	199%	189%	187%	232%	249%	193%	163%	188%	180%	171%
San Francisco, CA	182%	196%	250%	225%	228%	232%	218%	179%	213%	197%	179%
North Dakota	172%	187%	228%	222%	192%	227%	192%	182%	193%	185%	180%
Wyoming	164%	272%	230%	231%	230%	309%	208%	206%	185%	157%	196%
Nationwide	123%	156%	191%	155%	212%	163%	138%	134%	143%	125%	132%

¹Values are suppressed if the allowed amount in the claims data was less than \$100,000 due to credibility concerns.

Exhibit 3
2014 Average Physician Unit Cost by Procedure and Area

Physician Emergency Room Visit, procedure code 99284

<i>State/MSA</i>	<i>Billed</i>	<i>Allowed</i>	<i>Allowed / Billed</i>
Anchorage, AK	\$709	\$614	0.87
Portland, OR	\$498	\$316	0.63
New York, NY	\$528	\$275	0.52
San Francisco, CA	\$447	\$273	0.61
Los Angeles, CA	\$490	\$262	0.54
Santa Barbara, CA	\$634	\$237	0.37
Seattle, WA	\$435	\$235	0.54
Washington, DC	\$521	\$235	0.45
Chicago, IL	\$498	\$207	0.42

Exhibit 4
2014 Average Physician Unit Cost by Procedure and Area

Physician Colonoscopy with Biopsy, procedure code 45380

<i>State/MSA</i>	<i>Billed</i>	<i>Allowed</i>	<i>Allowed / Billed</i>
Anchorage, AK	\$1,876	\$1,540	0.82
San Francisco, CA	\$1,128	\$644	0.57
Portland, OR	\$1,086	\$563	0.52
Seattle, WA	\$989	\$446	0.45
New York, NY	\$1,312	\$421	0.32
Santa Barbara, CA	\$811	\$407	0.50
Los Angeles, CA	\$1,036	\$388	0.38
Chicago, IL	\$1,119	\$387	0.35
Washington, DC	\$919	\$328	0.36

Exhibit 5
2014 Average Physician Unit Cost by Procedure and Area

Physician Knee Replacement, procedure code 27447

<i>State/MSA</i>	<i>Billed</i>	<i>Allowed</i>	<i>Allowed / Billed</i>
Anchorage, AK	\$9,620	\$6,970	0.72
New York, NY	\$9,455	\$3,270	0.35
Seattle, WA	\$4,858	\$3,020	0.62
San Francisco, CA	\$5,041	\$2,779	0.55
Chicago, IL	\$8,802	\$2,734	0.31
Santa Barbara, CA	\$4,335	\$2,666	0.62
Portland, OR	\$4,687	\$2,518	0.54
Los Angeles, CA	\$6,907	\$1,994	0.29
Washington, DC	\$5,060	\$1,891	0.37

Exhibit 6
Medicare Payment Relativities by Area
All Provider Relativities (PPS and Non-PPS)

<i>State/MSA</i>	Relativity to Nationwide Medicare¹				
	<i>Inpatient²</i>	<i>Outpatient²</i>	<i>Hospital Total²</i>	<i>Professional</i>	<i>Total</i>
Anchorage, AK	1.23	1.07	1.15	1.18	1.15
Fairbanks, AK	2.06	1.27	1.68	1.23	1.46
Non-MSA, AK	1.61	2.01	1.80	1.21	1.64
Alaska	1.34	1.32	1.33	1.21	1.29
<i>Comparison Areas:</i>					
Washington DC	1.01	0.99	1.00	1.08	1.02
Chicago, IL	1.02	0.99	1.00	1.14	1.05
North Dakota	0.92	1.13	1.02	1.03	1.04
Idaho	1.02	1.10	1.06	1.06	1.07
Montana	0.98	1.15	1.06	1.08	1.08
Portland, OR	1.17	1.04	1.10	1.05	1.07
Honolulu, HI	1.14	1.06	1.10	1.05	1.07
Maine	0.99	1.17	1.08	0.94	1.05
Los Angeles, CA	1.24	1.02	1.13	0.99	1.07
Cheyenne, WY	1.31	0.98	1.15	0.97	1.06
Hawaii	1.19	1.06	1.13	1.00	1.08
Seattle, WA	1.17	1.08	1.13	1.14	1.12
Washington	1.13	1.13	1.13	0.98	1.08
New York, NY	1.21	1.08	1.15	1.00	1.09
Santa Barbara, CA	1.33	1.03	1.18	0.99	1.09
Oregon	1.19	1.14	1.17	0.99	1.10
California	1.29	1.11	1.20	1.04	1.13
Vermont	1.17	1.22	1.20	1.01	1.14
Wyoming	1.30	1.23	1.27	1.01	1.17
San Francisco, CA	1.56	1.25	1.41	1.01	1.25
Nationwide	1.00	1.00	1.00	1.00	1.00

¹Based on 2015 Medicare fee schedules and 2014 FFS data

²Includes non-PPS providers like critical access hospitals

Exhibit 7
2016 SHOP Exchange Monthly Premiums
Member Premiums by Area

<i>State/MSA</i>	Small Group (SHOP)			
	2nd Lowest Silver Plan		Lowest Blues Silver Plan	
	<i>Age 35</i>	<i>Relative to Alaska</i>	<i>Age 35</i>	<i>Relative to Alaska</i>
	<i>Premium</i>		<i>Premium</i>	
Anchorage, AK	\$495	1.00	\$629	0.97
Non-Anchorage, AK	\$495	1.00	\$657	1.02
Alaska - Statewide¹	\$495	1.00	\$646	1.00
Seattle, WA	\$260	0.53	N/A	N/A
Portland, ME	\$263	0.53	\$298	0.46
Chicago, IL	\$284	0.57	\$255	0.40
Billings, MT	\$304	0.61	\$329	0.51
Fargo, ND	\$317	0.64	\$304	0.47
New York, NY ²	\$440	0.89	N/A	N/A
Cheyenne, WY	\$444	0.90	\$443	0.69

¹Population-weighted among Rating Areas 1, 2, and 3

²ACA premiums are not age-rated in NY

Exhibit 8
2016 Individual Exchange Monthly Premiums
Member Premiums by Area

<i>State/MSA</i>	Individual Exchange			
	2nd Lowest Silver Plan		Lowest Blues Silver Plan	
	<i>Age 35 Premium</i>	<i>Relative to Alaska</i>	<i>Age 35 Premium</i>	<i>Relative to Alaska</i>
Anchorage, AK	\$688	1.00	\$774	0.98
Non-Anchorage, AK	\$688	1.00	\$807	1.02
Alaska - Statewide¹	\$688	1.00	\$793	1.00
Chicago, IL	\$189	0.27	\$238	0.30
Seattle, WA	\$217	0.32	\$267	0.34
Washington, DC	\$219	0.32	\$206	0.26
Los Angeles, CA ²	\$239	0.35	\$250	0.32
Honolulu, HI	\$251	0.36	\$249	0.31
Portland, OR	\$251	0.36	\$262	0.33
Boise, ID	\$261	0.38	\$293	0.37
Portland, ME	\$272	0.40	\$275	0.35
Fargo, ND	\$290	0.42	\$347	0.44
Billings, MT	\$308	0.45	\$319	0.40
Santa Barbara, CA	\$343	0.50	\$309	0.39
New York, NY ³	\$369	0.54	\$507	0.64
San Francisco, CA	\$371	0.54	\$371	0.47
Cheyenne, WY	\$408	0.59	\$401	0.51
Burlington, VT ³	\$468	0.68	\$465	0.59

¹Population-weighted among Rating Areas 1, 2, and 3

²Average of Rating Areas 15 and 16 (East and West LA)

³ACA premiums are not age-rated in New York or Vermont

Exhibit 9
Hospital Margins for Comparison Areas
Fiscal Years 2012 through 2014

<i>State/MSA</i>	<i>FY14 Number of Hospitals</i>	All Payer Total Margin				Medicare Operating Margin ¹			
		<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2012-2014²</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2012-2014²</i>
Anchorage, AK	4	20.7%	20.3%	20.8%	20.6%	-23.2%	-19.5%	-13.4%	-18.7%
Fairbanks, AK	1	2.3%	2.3%	9.9%	4.8%	-19.8%	-16.2%	-22.2%	-19.4%
Non-MSA Area, AK	10	12.9%	8.9%	8.4%	10.1%	-10.9%	-18.4%	-22.3%	-17.2%
Alaska	15	16.1%	14.7%	15.9%	15.6%	-19.0%	-18.8%	-16.5%	-18.1%
New York, NY	62	1.3%	4.1%	0.6%	2.0%	3.2%	2.4%	1.4%	2.4%
North Dakota	47	2.6%	1.6%	4.5%	2.9%	-0.5%	-4.1%	-4.5%	-3.1%
Maine	35	1.0%	4.9%	2.9%	2.9%	-12.0%	-11.4%	-11.8%	-11.7%
Cheyenne, WY	1	1.9%	4.3%	4.9%	3.7%	-17.2%	-23.0%	-26.2%	-22.1%
Seattle, WA	24	3.7%	4.2%	4.2%	4.0%	-19.7%	-16.0%	-13.0%	-16.2%
Montana	60	2.9%	5.3%	5.6%	4.6%	-6.9%	-8.3%	-8.5%	-7.9%
Vermont	15	3.7%	6.5%	4.9%	5.0%	-11.9%	-16.9%	-15.4%	-14.7%
Washington	95	4.4%	5.0%	6.3%	5.2%	-13.7%	-11.3%	-9.7%	-11.5%
Washington, D.C.	11	3.5%	9.2%	3.8%	5.5%	-5.7%	-6.5%	-8.9%	-7.0%
Los Angeles, CA	85	8.0%	6.9%	3.9%	6.2%	-7.5%	-6.7%	-9.0%	-7.7%
Hawaii	23	4.2%	7.8%	7.5%	6.5%	-3.5%	-5.2%	-6.7%	-5.1%
Chicago, IL	72	6.5%	7.0%	7.7%	7.1%	-7.5%	-6.8%	-5.8%	-6.7%
Santa Barbara, CA	6	6.7%	15.3%	0.0%	7.3%	-22.1%	-19.9%	-20.3%	-20.8%
Idaho	49	7.2%	6.6%	8.4%	7.4%	-11.4%	-12.6%	-12.0%	-12.0%
Honolulu, HI	10	4.3%	9.8%	9.5%	7.9%	-3.2%	-4.0%	-5.0%	-4.1%
California	338	7.3%	8.4%	7.1%	7.6%	-11.0%	-10.4%	-9.2%	-10.2%
Wyoming	29	8.2%	8.6%	7.8%	8.2%	-16.2%	-15.6%	-15.1%	-15.6%
Portland, OR	14	6.4%	7.2%	12.3%	8.6%	-11.9%	-9.1%	-7.8%	-9.6%
Oregon	56	7.3%	8.4%	11.5%	9.1%	-14.6%	-13.1%	-10.0%	-12.6%
San Francisco, CA	14	7.4%	9.8%	13.6%	10.3%	-20.5%	-16.9%	-18.4%	-18.6%
Nationwide	5,487	6.5%	7.3%	7.1%	6.9%	-4.3%	-3.4%	-2.4%	-3.4%

¹Medicare values based on cost report allocation process and Medicare allowed costs. This typically leads to better margins than if all costs are included and allocated by LOB.

²Calculated as an average of the three years

Exhibit 10
Hospital Operating Cost Relativities by Area

<i>State/MSA</i>	Hospital Cost Relativity		
	<i>Inpatient</i>	<i>Outpatient</i>	<i>Total</i>
Anchorage, AK	1.40	1.50	1.43
Fairbanks, AK	1.98	1.79	1.90
Non-MSA Area, AK	2.04	2.07	2.07
Alaska	1.52	1.70	1.58
North Dakota	0.94	1.03	0.99
Montana	1.01	1.03	1.03
Washington-Arlington-Alexandria, DC-VA	1.05	1.04	1.05
Chicago-Joliet-Naperville, IL	1.06	1.03	1.05
Idaho	1.09	1.07	1.09
Maine	1.08	1.20	1.14
Honolulu, HI	1.19	1.07	1.15
New York-White Plains-Wayne, NY-NJ	1.13	1.30	1.17
Portland-Vancouver-Hillsboro, OR-WA	1.24	1.04	1.17
Hawaii	1.21	1.10	1.18
Washington	1.23	1.21	1.23
Oregon	1.30	1.18	1.26
Los Angeles-Long Beach-Santa Ana, CA	1.29	1.18	1.26
Vermont	1.24	1.28	1.27
Seattle-Bellevue-Everett, WA	1.30	1.24	1.28
Cheyenne, WY	1.37	1.14	1.29
Santa Barbara-Santa Maria-Goleta, CA	1.53	1.03	1.33
Wyoming	1.31	1.36	1.34
California	1.40	1.22	1.34
San Francisco-San Mateo-Redwood City, CA	1.89	1.55	1.77
Nationwide	1.00	1.00	1.00

Exhibit 11
Hospital Occupancy Rates by Area
Fiscal Years 2012 through 2014

<i>State/MSA</i>	<i>FY14 Number of Hospitals</i>	<i>All Payer Occupancy Rate¹</i>		
		<i>2012</i>	<i>2013</i>	<i>2014</i>
Anchorage, Alaska	7	61.7%	66.6%	64.7%
Fairbanks, Alaska	1	37.5%	38.8%	38.3%
Non-MSA, Alaska	17	34.2%	35.6%	34.4%
Alaska	25	52.8%	57.1%	55.1%
Wyoming	29	40.9%	41.8%	43.2%
Idaho	50	47.7%	48.8%	48.4%
Cheyenne, WY	1	57.2%	56.2%	51.0%
San Francisco, CA	20	52.0%	51.9%	51.8%
Montana	64	53.7%	54.8%	53.1%
North Dakota	49	55.1%	53.5%	53.2%
Santa Barbara, CA	6	48.1%	53.5%	53.9%
California	402	57.8%	56.5%	56.0%
Oregon	62	57.4%	56.6%	56.9%
Los Angeles, CA	101	59.9%	59.2%	57.7%
Maine	38	57.0%	55.9%	58.4%
Portland, OR	17	61.4%	60.3%	59.6%
Chicago, IL	76	61.3%	59.6%	60.1%
Vermont	16	62.4%	64.7%	62.6%
Washington	99	63.2%	63.1%	63.7%
Seattle, WA	28	64.4%	66.7%	65.4%
Washington, D.C.	13	69.2%	69.4%	68.1%
Hawaii	25	69.4%	70.8%	69.8%
Honolulu, HI	12	72.6%	74.6%	72.7%
New York, NY	74	77.4%	76.7%	76.1%
Nationwide Average	6,008	59.4%	59.0%	58.7%

Notes:

¹Based on Medicare Cost Reports.