



Risk Strategies Consulting
**Observations from
2018 Medicare Experience**



The purpose of this document is to provide observations from a summary of Medicare experience relating to calendar year 2018. Our sources include the following Limited Data Set (“LDS”) files, which we licensed from the Centers for Medicare and Medicaid Services (“CMS”):

- Master Beneficiary Summary Files (5% and 100%)
- Carrier Standard Analytic File (5%)
- Durable Medical Equipment Standard Analytic File (5%); and,
- Inpatient Standard Analytic File (100%)

We validated our manipulation, interpretation, and use of the LDS files by benchmarking against externally reported CMS summary experience. The following notes explain ways in which our summaries differ from CMS’ summaries.

- We excluded membership and claims for Medicare Fee-for-Service (“FFS”) beneficiaries who were not active for the full 12-month year unless their coverage terminated due to death during the year. In other words, all beneficiaries who had missing coverage months during the year, or coverage months in an HMO, have been excluded.
- For inpatient hospital (“IPH”) admissions, we combined admissions and readmissions within 60 days of a discharge date. This explains why our count of admissions is a bit lower than shown in CMS summaries, as well as why our average length of stay (“ALOS”) is a bit longer than shown in CMS summaries.
- To summarize Office Visit (“OV”) claims, we selected claim records with Berenson-Eggers Type of Service (“BETOS”) codes corresponding to an office visit and procedure codes corresponding to evaluation and maintenance. Thus, the summarized charges relate to the office visit itself and not additional services provided in the physician office setting.

Relative Experience by State – Inpatient Hospital

Table 1 (next page) shows ratios which indicate the ratio of claim experience for each State relative to national average experience. Four metrics are included, relating to the number of hospital admissions per-member-per-year (“PMPY”), the average length of stay (“ALOS”), the average amount Medicare paid PMPY, and the average amount Medicare paid per admission.

Key observations include the following:

- A higher-than-average utilization ratio (i.e., number of admissions PMPY) often, but not always, results in higher-than-average cost ratio (i.e., Medicare paid PMPY). For example, consider Alabama: The utilization ratio is 10% higher than the national average, yet the cost ratio is 21% lower than the national average. Conversely, Oregon’s utilization ratio is 21% lower than the national average, but Oregon’s cost ratio is 4% higher than the national average. Alaska presents an even more extreme comparison.
- There is more variation in the ALOS than might have been expected for a federally administered health plan. Average length of stay ratios vary from a low of 0.74 to a high of 1.32. We did not attempt to explain this in this current study; however, future studies could explore correlations between ALOS and member risk characteristics (e.g., age, diagnoses) that might explain ALOS variations by geographic region.
- The variation in the amount-paid metrics (i.e., PMPY and per-admission) is even more pronounced, with ratios lows of 0.79 and highs exceeding 1.41.

Table 1: Inpatient Hospital Services				
Ratio of State to National Average State to National Average				
	# Admits PMPY	Avg Len of Stay	MC \$ Paid / Claimant	MC \$ Paid / Admit
Alabama	1.10	1.06	0.79	0.79
Alaska	0.77	1.02	1.41	1.47
Arizona	0.82	0.91	1.02	1.05
Arkansas	1.04	1.05	0.86	0.87
California	0.91	1.00	1.33	1.33
Colorado	0.82	0.82	0.95	0.98
Connecticut	1.08	1.02	1.11	1.10
Delaware	0.97	1.02	1.00	1.01
District of Columbia	1.01	1.32	1.23	1.21
Florida	1.09	0.99	0.90	0.89
Georgia	1.01	1.02	0.91	0.91
Hawaii	0.62	0.99	1.21	1.27
Idaho	0.80	0.76	0.86	0.90
Illinois	1.08	0.95	0.96	0.94
Indiana	1.05	0.94	0.92	0.92
Iowa	0.90	0.82	0.82	0.85
Kansas	1.05	0.87	0.84	0.84
Kentucky	1.09	1.00	0.87	0.86
Louisiana	1.12	1.26	0.99	0.98
Maine	0.87	0.94	0.90	0.92
Maryland	0.94	1.03	1.31	1.31
Massachusetts	1.07	1.07	1.15	1.13
Michigan	1.11	0.97	0.97	0.96
Minnesota	1.02	0.90	1.01	1.01
Mississippi	1.09	1.04	0.83	0.82
Missouri	1.08	0.95	0.89	0.88
Montana	0.83	0.78	0.86	0.89
Nebraska	0.97	0.86	0.90	0.92
Nevada	0.97	1.18	1.22	1.22
New Hampshire	0.90	0.99	1.02	1.03
New Jersey	1.03	1.11	1.14	1.13
New Mexico	0.80	0.94	0.97	1.00
New York	1.05	1.13	1.22	1.21
North Carolina	0.97	0.95	0.87	0.88
North Dakota	0.90	0.85	0.86	0.88
Ohio	1.07	0.94	0.91	0.91
Oklahoma	1.07	1.02	0.92	0.92
Oregon	0.79	0.82	1.01	1.04
Pennsylvania	1.06	1.04	0.97	0.97
Rhode Island	1.01	0.92	0.97	0.97
South Carolina	0.90	1.01	0.89	0.91
South Dakota	0.91	0.78	0.85	0.87
Tennessee	1.03	0.98	0.82	0.82
Texas	1.04	1.15	1.06	1.05
Utah	0.82	0.74	0.87	0.91
Vermont	0.84	0.88	0.86	0.89
Virginia	0.96	0.93	0.87	0.87
Washington	0.82	0.88	0.97	1.00
West Virginia	1.08	1.07	0.92	0.91
Wisconsin	0.91	0.86	0.88	0.90
Wyoming	0.86	0.81	1.07	1.11
National Average	1.00	1.00	1.00	1.00

Relative Experience by State – Office Visits

Table 2 (to the right) provides state-vs-national relative ratios for each State. The four metrics included are number of office visits (“OV”) PMPY, average office visit charges PMPY, average Medicare-allowed office visit charges PMPY, and average Medicare paid PMPY.

Following are key takeaways from Table 2.

- The highest OV utilization rate (i.e., number of OV PMPY) is in Florida, and the lowest is in Vermont. The variation by state is significant, with the Florida rate almost twice that of Vermont.
- Vermont also has the lowest cost ratios, with charges, allowed charges, and amount paid PMPY ratios ranging from 44% to 55% lower than the national average.
- The highest charges PMPY ratio is in Massachusetts, at 40% higher than the national average. But the highest allowed PMPY and paid PMPY ratios are in New Jersey, where ratios are around 35% higher than the national average. We did not, in this current study, attempt to explain this finding by searching for correlations by age, geographic region, diagnoses, etc.
- The top-to-bottom range in paid PMPY ratios is 300% – meaning that the average amount paid PMPY in the highest region (e.g., New Jersey) is three times the average amount paid PMPY in the lowest region (e.g., Vermont).

	# Visits PMPY	\$ Charges PMPY	\$ Allowed PMPY	MC \$ Paid PMPY
AL	1.02	0.76	0.97	0.95
AK	0.75	1.03	0.86	0.85
AZ	1.12	1.12	1.15	1.16
AR	0.93	0.76	0.85	0.82
CA	1.03	1.16	1.14	1.16
CO	0.85	0.93	0.88	0.86
CT	1.12	1.20	1.18	1.20
DE	1.17	1.05	1.18	1.19
DC	0.89	0.94	0.99	1.01
FL	1.27	1.31	1.32	1.36
GA	1.09	1.11	1.06	1.05
HI	0.94	0.83	0.96	0.90
ID	0.76	0.63	0.64	0.62
IL	0.93	0.92	0.94	0.94
IN	0.97	0.81	0.89	0.87
IA	0.79	0.74	0.69	0.68
KS	0.79	0.67	0.72	0.71
KY	0.95	0.81	0.85	0.83
LA	0.99	0.90	0.95	0.94
ME	0.73	0.59	0.61	0.61
MD	1.11	1.16	1.23	1.25
MA	1.04	1.40	1.10	1.11
MI	0.91	0.71	0.88	0.87
MN	0.77	0.89	0.71	0.71
MS	0.97	0.77	0.87	0.85
MO	0.80	0.70	0.74	0.74
MT	0.66	0.56	0.60	0.58
NE	0.80	0.77	0.71	0.70
NV	0.99	1.09	1.02	1.02
NH	0.85	0.90	0.81	0.81
NJ	1.21	1.28	1.34	1.36
NM	0.81	0.78	0.76	0.76
NY	1.19	1.39	1.26	1.30
NC	1.03	0.99	1.00	0.99
ND	0.74	0.64	0.61	0.58
OH	0.98	0.86	0.92	0.88
OK	0.96	0.85	0.89	0.86
OR	0.75	0.92	0.74	0.71
PA	0.98	0.86	0.98	0.97
RI	1.06	1.04	1.08	1.07
SC	1.04	0.94	1.00	0.99
SD	0.72	0.52	0.59	0.59
TN	1.05	1.00	0.97	0.95
TX	0.99	1.05	0.99	0.99
UT	0.89	0.82	0.87	0.85
VT	0.65	0.45	0.56	0.45
VA	1.02	0.97	1.02	1.01
WA	0.83	0.90	0.85	0.84
WV	0.86	0.71	0.77	0.75
WI	0.80	0.99	0.72	0.71
WY	0.75	0.74	0.69	0.68
National Average	1.00	1.00	1.00	1.00

Relative Experience by State – Durable Medical Equipment

Table 3 (to the right) shows state-vs-national relative ratios for the following metrics relating to Durable Medical Equipment (“DME”): average number of claims PMPY, average charges PMPY, average allowed charges PMPY, and average Medicare paid PMPY.

Observations from Table 3 include the following:

- Hawaii has the lowest utilization ratio (i.e., average number of claims PMPY). DME utilization in Hawaii is 58% lower than the national average. In addition, the average amount Medicare paid PMPY is 61% lower than the national average.
- Kentucky has the highest utilization rate, 38% higher than the national average.
- The highest cost metrics overall, however, are in Mississippi, where charges PMPY, allowed charges PMPY, and paid PMPY are all around 40% higher than the national average.
- The top-to-bottom range of DME utilization ratios is even larger than for office visits, with the highest utilization region (e.g., Kentucky) 328% as high as the lowest utilizing region (i.e., Hawaii).
- The high-vs-low range for Medicare paid PMPY is a bit larger, with highest-PMPY Mississippi 358% of the corresponding metric in Hawaii.

	# Admits PMPY	Avg Len os Stay	MC \$ Paid/ Claimant	MC \$ Paid /Admit
AL	1.10	1.06	0.79	0.79
AK	0.77	1.02	1.41	1.47
AZ	0.82	0.91	1.02	1.05
AR	1.04	1.05	0.86	0.87
CA	0.91	1.00	1.33	1.33
CO	0.82	0.82	0.95	0.98
CT	1.08	1.02	1.11	1.10
DE	0.97	1.02	1.00	1.01
DC	1.01	1.32	1.23	1.21
FL	1.09	0.99	0.90	0.89
GA	1.01	1.02	0.91	0.91
HI	0.62	0.99	1.21	1.27
ID	0.80	0.76	0.86	0.90
IL	1.08	0.95	0.96	0.94
IN	1.05	0.94	0.92	0.92
IA	0.90	0.82	0.82	0.85
KS	1.05	0.87	0.84	0.84
KY	1.09	1.00	0.87	0.86
LA	1.12	1.26	0.99	0.98
ME	0.87	0.94	0.90	0.92
MD	0.94	1.03	1.31	1.31
MA	1.07	1.07	1.15	1.13
MI	1.11	0.97	0.97	0.96
MN	1.02	0.90	1.01	1.01
MS	1.09	1.04	0.83	0.82
MO	1.08	0.95	0.89	0.88
MT	0.83	0.78	0.86	0.89
NE	0.97	0.86	0.90	0.92
NV	0.97	1.18	1.22	1.22
NH	0.90	0.99	1.02	1.03
NJ	1.03	1.11	1.14	1.13
NM	0.80	0.94	0.97	1.00
NY	1.05	1.13	1.22	1.21
NC	0.97	0.95	0.87	0.88
ND	0.90	0.85	0.86	0.88
OH	1.07	0.94	0.91	0.91
OK	1.07	1.02	0.92	0.92
OR	0.79	0.82	1.01	1.04
PA	1.06	1.04	0.97	0.97
RI	1.01	0.92	0.97	0.97
SC	0.90	1.01	0.89	0.91
SD	0.91	0.78	0.85	0.87
TN	1.03	0.98	0.82	0.82
TX	1.04	1.15	1.06	1.05
UT	0.82	0.74	0.87	0.91
VT	0.84	0.88	0.86	0.89
VA	0.96	0.93	0.87	0.87
WA	0.82	0.88	0.97	1.00
WV	1.08	1.07	0.92	0.91
WI	0.91	0.86	0.88	0.90
WY	0.86	0.81	1.07	1.11
National Average	1.00	1.00	1.00	1.00

Relative Experience by Age Band - Inpatient Hospital

Table 4 (below) summarizes experience by age band, using the following metrics: aggregate number of admissions, percent of Medicare FFS members with one or more hospital admissions in the calendar year, average number of admissions per claimant (i.e., Medicare FFS member with one or more admissions), average length of stay per admission, and average Medicare paid amount per admission.

Table 4: Office Inpatient Hospital Services					
Age Band	# Admits (million)	% Members w/ Admit	# Admits / Claimant	Avg Length of Stay	MC \$Paid / Admit
Under 65	1.26	19.4%	1.29	9.45	\$19,013
65-74	2.32	13.1%	1.19	7.32	\$18,337
75-84	2.00	20.5%	1.20	7.51	\$17,113
85+	1.33	30.0%	1.21	7.00	\$14,264
All	6.91	17.9%	1.21	7.70	\$17,320

Observations from Table 4 include the following:

- For ages 65 and older, there is a steadily increasing rate of utilization (i.e., percent of members with at least one hospital admission), beginning at 13.1% in the youngest age band and increasing to 30.0% in the highest age band.
- Utilization for the under-65 age group falls just a bit less than the utilization metric for ages 75-84.
- The average number of admissions per claimant is flat across ages 65+ but is higher in the under-65 age group.
- The ALOS is lowest for the oldest age group (i.e., 85+) and highest for the youngest age group (i.e., under-65).
- The overall average ALOS, 7.70 days, is just under 2 days longer than the 5.84 ALOS reported by CMS for 2018. As indicated in the data notes above, we have combined hospital stays where the gap between prior discharge and next admission dates is 60 days or less.
- The pattern of average cost per admission corresponds with the pattern of ALOS by age: Lowest for the oldest ages and highest for the youngest age group. This makes sense, as there is likely to be a correspondence between Medicare payments and the length of a hospital stay.

Relative Experience by Age Band - Office Visits

Office Visit utilization and cost metrics by age group are summarized in Table 5 (below). Included are two utilization metrics (i.e., percent of members with one or more office visit claims in the calendar year, and average number of office visits PMPY) and three cost metrics (i.e., average total office visit charges PMPY, average total office visit related allowed charges PMPY, and average total office visit Medicare paid PMPY).

Table 5: Office Visits					
Age Band	% Members w/ Claim(s)	# Visits PMPY	\$ Charges PMPY	\$ Allowed PMPY	MC \$ Paid PMPY
Under 65	82.7%	7.79	\$1,470	\$658	\$447
65-74	87.4%	7.38	\$1,379	\$652	\$443
75-84	92.1%	9.06	\$1,660	\$804	\$562
85+	87.8%	7.89	\$1,416	\$694	\$485
All	87.9%	7.92	\$1,469	\$696	\$478

Key takeaways from Table 5 are shown below.

- The utilization rate (i.e., number of members with one or more office visit claims) is fairly flat across age bands, with a maximum deviation of around 5 percentage points from the overall average.
- However, there is significant variation by age in the average number of visits PMPY. Ages 65-74 have the lowest average number of office visits PMPY, while ages 75-84 have the highest number of office visits PMPY. The average OV utilization for ages 75-84 is significantly higher than the corresponding metrics for ages 85+ and the under-65 age group.
- The variation in average charges PMPY is fairly shallow, with a high-vs-low range of only 20%. (That is, the highest average charges PMPY – \$1660 for ages 75-84 – is only 20% higher than the lowest average charges PMPY – \$1379 for ages 65-74.)
- The variation in average amount paid PMPY is only a bit steeper than this, with a high-vs-low range of 27%.

Relative Experience by Age Band - Durable Medical Equipment

Utilization (i.e., percent of Medicare FFS members with one or more DME claims in the calendar year, and average number of DME services PMPY) and cost (i.e., average charges PMPY, average allowed charges PMPY, and average Medicare paid PMPY) metrics are shown on Table 6 (below)

Age Band	% Members w/ Claim(s)	# Services PMPY	\$ Charges PMPY	\$ Allowed PMPY	MC \$Paid PMPY
Under 65	31.3%	2.46	\$1,813	\$582	\$443
65-74	25.7%	1.58	\$861	\$264	\$202
75-84	31.9%	2.01	\$974	\$298	\$228
85+	31.3%	1.92	\$785	\$239	\$182
All	28.8%	1.87	\$1,033	\$321	\$245

Observations from Table 6 are noted below.

- The overall utilization rate (i.e., percent of members with one or more DME claims in the calendar year) is somewhat higher than that for IPH, with around 29% of Medicare FFS beneficiaries having one or more DME claims in 2018.
- Among age groups, DME utilization for ages 65-74 is lowest, at 25.7%, and utilization for all other ages is fairly flat, at around 31%–32%.
- The average number of services PMPY, however, varies significantly by age band. This utilization metric is lowest for ages 65-74 and highest for those in the under-65 age group. Those in the oldest age group have a smaller average number of DME services PMPY than the under-65s or even compared to ages 75-84.
- In terms of cost, the oldest age group is the least costly on a PMPY basis, whether looking at average charges, average allowed charges, or average paid PMPY. The average amount paid PMPY for the 85+ age group is 26% lower than the average paid PMPY across all ages and is 59% lower than the average paid PMPY for under-65s.

Overall Observations

A few observations were a somewhat surprising outcome of this exercise.

- In general, IPH experience relativities by state indicate significant variation both in utilization (i.e., average number of hospital admissions PMPY) and in cost (i.e., average amount paid per admission), with a high-to-low variation exceeding 180%.
- Variations by state in OV and DME experience are even greater than the corresponding variation in IPH experience.
- The slope of experience by age band, in these three benefit categories, is generally contrary to what is typically used in pricing Medicare Supplement products, where PMPY claim costs are typically assumed to increase monotonically by attained age. This might suggest that the age-related experience of Medicare Supplement carriers has as much (or more) to do with increasing anti-selection by policy duration as with pure policyholder aging. (That is, healthier policyholders are more able to terminate their coverage to seek a lower-priced policy. In contrast, less-healthy policyholders are unable to pass underwriting with a new carrier, so they are more likely to persist. This dynamic can create anti-selection by policy duration.) However, I recognize that this brief study examined experience in only three service categories. Additional studies are recommended.

Caveats and Limitations

This document and the accompanying data tables are provided solely for informational purposes. Risk Strategies Consulting (“RSC”) makes no warranties or recommendations regarding the appropriateness of these data and/or observations for direct application to any particular situation or use. In particular, RSC does not recommend using these data for pricing any insurance product without professional actuarial evaluation of the relevance of CMS experience to the anticipated experience of the covered population, the time frame for projection, and other factors which could impact the pertinence of these data for use in pricing an insured product.

While we have made every effort to maintain the integrity of the original data sources in our data manipulation, interpretation, and summary processes, there is always potential for misunderstandings about the data to result in inaccuracies in data handling. In my opinion, the summaries presented here faithfully represent the original data sources, but RSC and I reserve the right to revise and/or retract the document if additional information emerges which would alter this opinion.

It is assumed that anyone utilizing this information possesses the technical expertise to do so. RSC accepts no responsibility for ways in which this information might be used (or misused) in contexts over which we have no control.

The purpose of this document is to provide a brief summary of findings. In this study, we have made no attempt to explain the findings or to identify correlations between the findings and member risk characteristics. Such correlations are likely, and further study could be made to identify them.

I can be reached via the information below to discuss any of these findings and/or observations.

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