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# Outpatient ancillary trends in the Medicare fee-for-service population: 2008-2012

Prepared for: American Medical Association (AMA)  
330 North Wabash Avenue  
Chicago, IL 60611

Chase Center/Circle  
111 Monument Circle  
Suite 601  
Indianapolis, IN 46204 USA

Prepared by: Robert Damler, FSA, MAAA, Principal & Consulting Actuary  
Mat DeLillo, MBA, Healthcare Consultant

Tel +1 317 639 1000  
Fax +1 317 639 1001

[milliman.com](http://milliman.com)

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## I. INTRODUCTION

Milliman Inc. (Milliman) was retained by the American Medical Association (AMA) to perform a trend analysis of certain Medicare ancillary services. The services include:

- Radiology with a focus on advanced imaging
- Intensity modulated radiation therapy (IMRT)
- Pathology and laboratory
- Physical therapy

This document provides the results of the analysis. It should be noted that we do not recommend or promote any particular policy decisions related to the Medicare program or the provision of these specific services.

The services provided for this project were performed under the signed consultant agreement between Milliman, Inc. and the American Medical Association dated August 25, 2014. The project was funded solely by the American Medical Association. The work was intended for use by the American Medical Association. Milliman does not intend to benefit any third-party recipient of its work product, even if Milliman consents to the release of its work product to such third party. Any third-party recipient of this work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs. Any release of this report to a third party should be in its entirety.

In performing this analysis, we relied on data and other information obtained from public data sources. We have not audited or verified this data and other information. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. Robert M. Damler is a member of the American Academy of Actuaries and meets the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein. To the best of his knowledge and belief, this information is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

## II. EXECUTIVE SUMMARY

Medicare is the federal health insurance program for elderly people age 65 and older, people with disabilities, and people with end-stage renal disease (ESRD). Medicare benefits are structured and administered through four different packages:

- Part A covers inpatient hospital, skilled nursing facility, home health, and hospice services.
- Part B covers physician services and other outpatient care.
- Part C is the Medicare Advantage (MA) program, which is an optional managed care service delivery system for Medicare enrollees. Enrollees can receive Part A and Part B benefits through Medicare Advantage.
- Part D is the outpatient prescription drug benefit.

The scope of services examined in this paper is a subset of services provided in the outpatient setting under Medicare Part B. The chart in Figure 1 illustrates each of our areas of focus as a percentage of total Part A and Part B allowed amounts. In total, the areas of analysis represent 10.9% of combined Part A and Part B fee-for-service allowed charges in calendar year 2012.

The report reviews each service area below at a composite level and by site of service. The underlying metrics that describe medical trend will be also reviewed. These metrics include the average monthly allowed charges per beneficiary (AMPB), utilization per 1,000 members, allowed charges per unit, and the percentage of beneficiaries receiving the service.

**Figure 1: Report Study Items as a Percentage of Medicare Part A and Part B Allowed Charges**

American Medical Association Medicare 5% Sample Fee-for-Service Population				
	Total Allowed Charges (CY 2012)*	Percentage of Total Medicare Part A/B Allowed Amount	Allowed AMPB (CY 2012)	Percentage Receiving
<b>Total Medicare Part A/B</b>	\$ 408,902.1	100%	\$ 1,056.79	n/a
<b>Advanced Imaging</b>	\$ 7,886.4	1.9%	\$ 20.38	1.2%
<b>Other Radiology</b>	\$ 8,707.8	2.1%	\$ 22.50	59.2%
<b>Pathology and Lab</b>	\$ 11,777.3	2.9%	\$ 30.44	80.0%
<b>Physical Therapy</b>	\$ 14,582.5	3.6%	\$ 37.69	20.7%
<b>IMRT</b>	\$ 1,438.3	0.4%	\$ 3.72	0.3%
<b>All Other Services</b>	\$ 364,509.8	89.1%	\$ 942.06	n/a

**\*Notes**

- Total expenditures in millions extrapolated to 100% fee-for-service population.
- Assumes approximately 32,250,000 Medicare fee-for-service enrollees in 2012.

### III. METHODOLOGY

We utilized the Medicare 5% Sample file from calendar years 2008 through 2012 to perform the analysis. The 5% Sample contains de-identified publicly available data for the Medicare fee-for-service (FFS) population. It contains information for every 20<sup>th</sup> Medicare FFS enrollee, and we extrapolated our results to the entire Medicare FFS population by multiplying by a factor of 20. The results of our analysis exclude any services performed while a Medicare beneficiary was enrolled in a Medicare Advantage plan. The scope of our analysis is limited to Medicare Part B services.

We included members enrolled only in both Medicare Part A and Part B. Members with ESRD were excluded from the analysis.

Medical trend is driven by the cost of the service (fee), the number of people receiving the service, the frequency of the service, and the mix of services provided. The Medicare data was extracted to prepare metrics that depict each trend component. These metrics include the following.

- **Estimated total allowed charges.** Allowed charges are the portion of the total billed charge that Medicare covers or “allows” the provider to collect from all sources.
- **Annualized utilization per 1,000 members.** This is the average number of units of service used by 1,000 enrollees in a year.
- **Allowed charges per unit.** For each of the service areas in this report, unit cost is provided at a composite level. It should be noted that unit cost at this level may be influenced by service mix and thus a comparison of unit cost between site of service and the trend over time may be inappropriate.
- **Average monthly allowed charges per beneficiary (AMPB).** This metric is calculated as the total allowed charges on the claims divided by the member months for the study population.
- **Percentage of beneficiaries receiving the service (percentage receiving).** This is calculated as the number of unique beneficiaries receiving the service as a percentage of the average Part B fee-for-service enrollment.

Medicare payments for many of the services in this report have two components. First, there is a technical component, which covers the equipment, supplies, and technical staff. Second, there is a professional component, which covers the physician interpretation of the image or service. In some cases a unit will be counted when there is a technical and professional claim line billed separately. For example, if a person receives an x-ray in a hospital outpatient setting, it is common for a technician to perform the x-ray (technical component) and a physician to read and interpret the image (professional component). In this example, our study would count this single encounter as two distinct units. In other instances or settings, this could be counted as one unit under a global claim line.

We have reviewed the above metrics in total, by site of service, across all specialty referrals, and in some cases by the diagnosis code present on the claim in order to understand the Medicare trends. This research report provides a depiction of the high-level trends observed in the data.

## IV. MEDICARE POPULATION TRENDS

The underlying morbidity of a population changes over time for many reasons, including the aging of the population and selection differences caused by varying levels of participation in delivery systems. In the Medicare program, individuals have shifted between the fee-for-service (FFS) and managed care programs.

Medicare utilizes the Centers for Medicare and Medicaid Services-Hierarchical Condition Category (CMS-HCC) risk adjustment methodology to provide higher reimbursement to Medicare Advantage (MA) plans enrolling sicker members, and lower reimbursement to MA plans enrolling healthier members. Risk scores measure individual beneficiaries' relative risk and risk scores are used to adjust payments for each beneficiary's expected expenditures in the Medicare Advantage program.

The CMS-HCC risk score represents the relative level of total expected healthcare costs for an individual and may not be representative of the expected healthcare costs associated with any one specific service. The CMS-HCC risk score does not measure the morbidity relationship of subcomponents without further calibration. Therefore, we have not adjusted the values presented in the report for the CMS-HCC risk score because the values are subcomponents.

We are providing the scores to highlight the potential changes in the morbidity profile of the FFS population, although we have not utilized the factors to adjust any of the values illustrated in this report.

Over the period of 2008 through 2012, the composite risk scores for Medicare FFS beneficiaries increased each year, before normalization. Figures 2 and 3 illustrate the composite CMS-HCC risk score for the Medicare FFS population and the penetration of Medicare Advantage in the overall Medicare population. Readers of this report should be cognizant that over the reported time period the risk scores associated with the FFS population have increased. Note that the risk adjustment process is recalibrated each year to dampen the effect of such trend, and that the process is revised every few years, by adding or deleting conditions and revising the hierarchies, to attempt to smooth out the risk scores over time and to improve the correlation between an individual's risk scores and their costs.

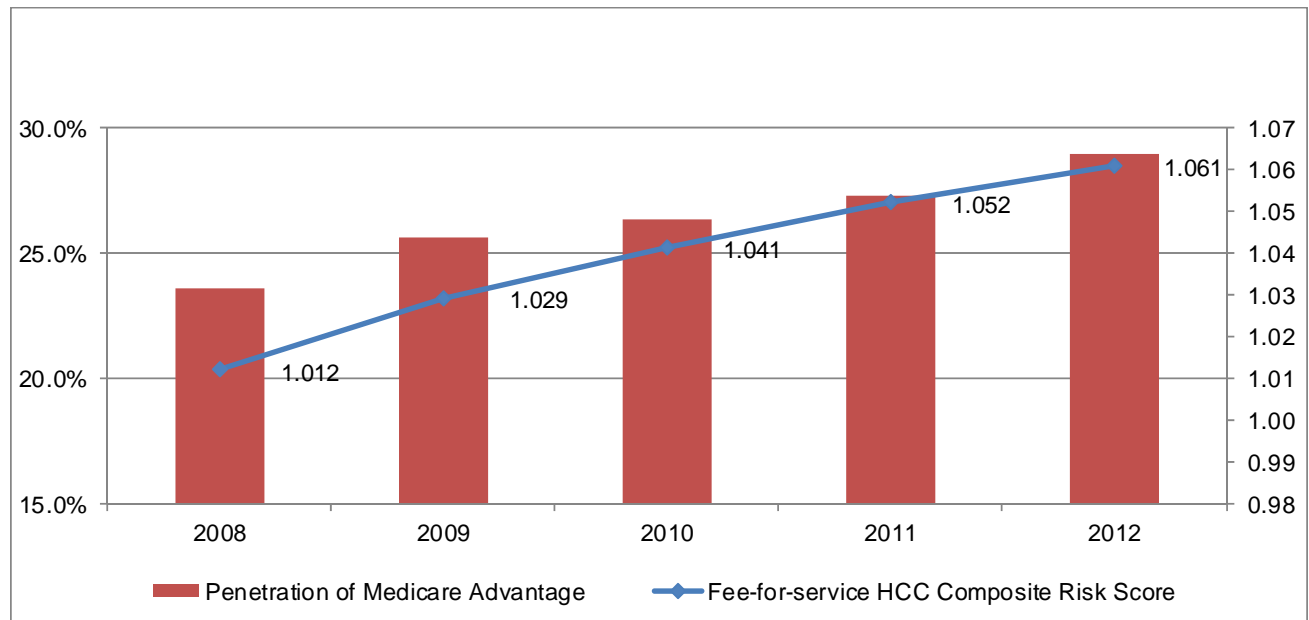
**Figure 2: CMS-HCC Risk Score and Medicare Advantage Penetration Trend**

American Medical Association Medicare 5% Sample Fee-for-Service Population					
	2008	2009	2010	2011	2012
<b>Fee-for-Service HCC Composite Risk Score</b>	1.012	1.029	1.041	1.052	1.061
<b>Penetration of Medicare Advantage</b>	23.6%	25.7%	26.4%	27.3%	29.0%

**Notes**

- Excludes ESRD beneficiaries.
- Risk scores calculated using the CMS-HCC model for 2014.

Figure 3: CMS-HCC Risk Score and Medicare Advantage Penetration Trend (CY 2008-2012)



## V. RADIOLOGY AND ADVANCED IMAGING

Radiology is the broad service category that focuses on diagnosing and treating diseases and injuries using various medical imaging techniques. For the purposes of our analysis, we have separated this broad category into four different subsets. Advanced imaging includes techniques such as computed tomography (CT), positron emission tomography (PET), magnetic resonance imaging (MRI), and intensity-modulated radiation therapy (IMRT). A detailed listing of codes used to identify advanced imaging is included in Appendix 1. The remaining services that fall within the radiology service category are further categorized as other diagnostic radiology and other therapeutic radiology. Appendix 1 also includes a complete listing of the codes used to identify other therapeutic and diagnostic radiology.

### Advanced imaging

At a composite level, the observed annualized trend in advanced imaging APMB over the five-year period (“5-year Annualized Trend”) is 0.4%. Figure 4 illustrates cost and utilization trend metrics by year as well as the five-year trend rate.

**Figure 4: Advanced Imaging Composite Trends**

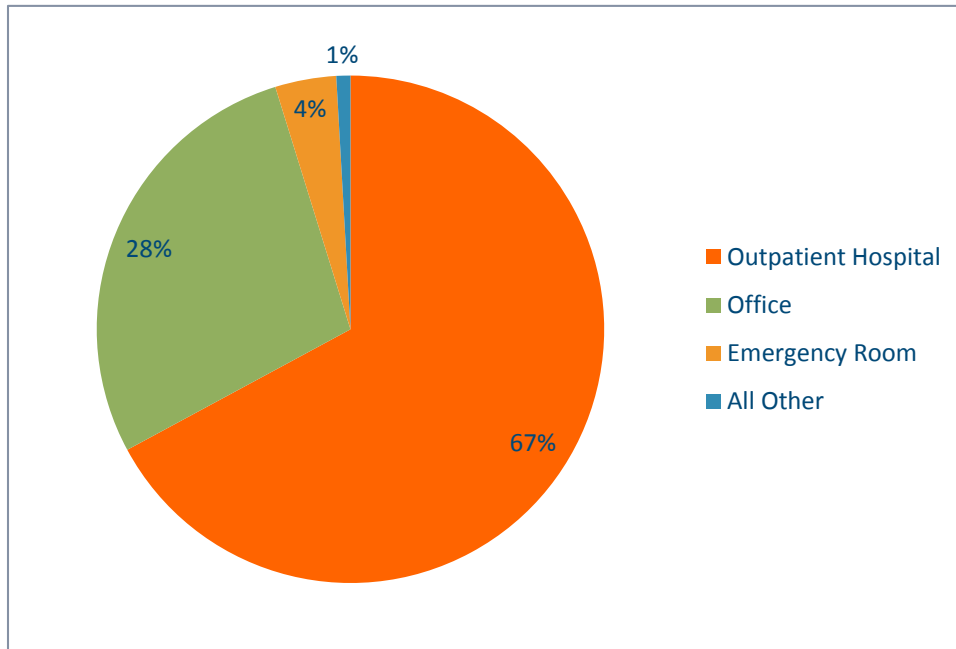
American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 20.04	\$ 21.39	\$ 20.67	\$ 19.27	\$ 20.38	0.4%
<b>Utilization per 1,000</b>	1,114.0	1,169.4	1,177.1	1,045.5	1,070.9	(1.0%)
<b>Allowed Charges per Unit</b>	\$ 215.87	\$ 219.50	\$ 210.72	\$ 221.18	\$ 228.37	1.4%
<b>Percentage Receiving</b>	26.39%	27.09%	27.08%	27.42%	27.63%	1.2%
<b>Total Allowed Cost *</b>	\$ 7,526.7	\$ 7,994.2	\$ 7,817.7	\$ 7,370.4	\$ 7,886.4	1.2%

\* Value in millions; extrapolated to 100% of fee-for-service population.

Advanced imaging is primarily delivered in outpatient hospital and office settings. Figure 5 provides the percentage distribution of the 2012 allowed charges by site of service.



**Figure 5: Advanced Imaging by Site of Service (CY 2012 % of allowed charges)**



Figures 6 and 7 illustrate cost and utilization trend metrics for outpatient hospital and office, respectively. The five-year annualized trend for the AMPB in the outpatient hospital setting is 3.3%. The five-year annualized trend for the AMPB in the office setting is (5.5%).

**Figure 6: Advanced Imaging Outpatient Hospital Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 12.00	\$ 13.06	\$ 12.69	\$ 11.97	\$ 13.68	3.3%
<b>Utilization per 1,000</b>	699.0	732.9	734.6	648.6	669.7	(1.1%)
<b>Allowed Charges per Unit</b>	\$ 206.01	\$ 213.84	\$ 207.30	\$ 221.46	\$ 245.12	4.4%
<b>Percentage Receiving</b>	17.99%	18.69%	18.80%	19.21%	19.70%	2.3%
<b>Total Allowed Cost *</b>	\$ 4,508.7	\$ 4,881.3	\$ 4,801.8	\$ 4,579.1	\$ 5,293.1	4.1%

\* Value in millions; extrapolated to 100% of fee-for-service population.

**Figure 7: Advanced Imaging Office Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 7.16	\$ 7.37	\$ 6.95	\$ 6.33	\$ 5.72	(5.5%)
<b>Utilization per 1,000</b>	262.8	269.8	262.0	233.1	224.8	(3.8%)
<b>Allowed Charges per Unit</b>	\$ 326.94	\$ 327.80	\$ 318.32	\$ 325.87	\$ 305.34	(1.7%)
<b>Percentage Receiving</b>	10.40%	10.45%	10.09%	9.97%	9.60%	(2.0%)
<b>Total Allowed Cost *</b>	\$ 2,691.6	\$ 2,755.3	\$ 2,629.9	\$ 2,419.3	\$ 2,214.6	(4.8%)

\* Value in millions; extrapolated to 100% of fee-for-service population.

It should be noted that allowed charges per unit as reported in Figures 4, 6, and 7 may be influenced by service mix and the setting where the service was provided. Figure 8 has been developed to facilitate an understanding of the variances that are due to each of these items. Figure 8 illustrates what Medicare allows for a service delivered in the outpatient hospital setting versus the physician office setting and the proportion of the total advanced imaging services within each setting represented by that procedure. The services depicted include the top five services by total allowed charges in calendar year 2012 where the service is paid under the Medicare Physician Fee Schedule and the Outpatient Prospective Payment System.

**Figure 8: Top 5 Advanced Imaging Fees by Site of Service**

American Medical Association Medicare 5% Sample Fee-for-Service Population					
Service	Code	What Medicare Allows in the Office Setting <sup>1</sup>	Procedures as a Percentage of Total Office Setting <sup>3</sup>	What Medicare Allows in the Hospital Outpatient Setting <sup>2</sup>	Procedures as a Percentage of Total Outpatient Hospital Setting <sup>3</sup>
CT abdomen & pelvis w/contrast	74177	\$ 327.42	5%	\$ 482.91	9%
CT head/brain w/o dye	70450	\$ 125.02	3%	\$ 169.46	20%
CT abdomen & pelvis w/o contrast	74176	\$ 218.88	4%	\$ 330.63	7%
MRI lumbar spine w/o dye	72148	\$ 246.10	10%	\$ 371.08	4%
MRI brain stem w/o & w/dye	70553	\$ 397.27	4%	\$ 609.70	3%

**Notes**

1. 2014 Medicare Physician Fee Schedule non-facility total payment (global).
2. 2014 Outpatient Prospective Payment System and the professional component of the physician fee schedule.
3. Of all advanced imaging in the setting. Values are rounded.

**Other diagnostic radiology**

At a composite level, other diagnostic radiology has a five-year annualized trend in the AMPB of (1.2%). Figure 9 illustrates cost and utilization trend metrics by year as well as the five-year trend rate.

**Figure 9: Other Diagnostic Radiology Composite Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 17.26	\$ 17.67	\$ 16.82	\$ 17.67	\$ 16.47	(1.2%)
<b>Utilization per 1,000</b>	3,768.7	3,857.5	3,640.0	3,679.5	3,643.1	(0.8%)
<b>Allowed Charges per Unit</b>	\$ 54.96	\$ 54.97	\$ 55.45	\$ 57.63	\$ 54.25	(0.3%)
<b>Percentage Receiving</b>	59.96%	60.43%	59.88%	59.79%	59.20%	(0.3%)
<b>Total Allowed Cost *</b>	\$ 6,485.7	\$ 6,603.8	\$ 6,362.2	\$ 6,758.8	\$ 6,374.0	(0.4%)

It should be noted that allowed charges per unit as reported in Figure 9 may be influenced by service mix and the setting where the service was provided. Figure 10 has been developed to facilitate an understanding of the variances that are due to each of these items. Figure 10 illustrates what Medicare allows for a service delivered in the outpatient hospital setting versus the physician office setting and the proportion of the total diagnostic radiology services within each setting represented by that procedure. The services depicted include the top five services by total allowed charges in calendar year 2012 where the service is paid under the Medicare Physician Fee Schedule and the Outpatient Prospective Payment System.

**Figure 10: Top 5 Other Diagnostic Radiology Fees by Site of Service**

American Medical Association Medicare 5% Sample Fee-for-Service Population					
Service	Code	What Medicare Allows in the Office Setting <sup>1</sup>	Procedures as a Percentage of Total Office Setting <sup>3</sup>	What Medicare Allows in the Hospital Outpatient Setting <sup>2</sup>	Procedures as a Percentage of Total Outpatient Hospital Setting <sup>3</sup>
Ht muscle image spect mult	78452	\$ 486.47	4%	\$ 1,233.50	2%
Chest x-ray 2 view frontal & lateral	71020	\$ 31.17	10%	\$ 68.46	15%
Chest x-ray 1 view frontal	71010	\$ 24.00	<1%	\$ 66.66	9%
DXA bone density axial	77080	\$ 49.44	5%	\$ 100.55	3%
Us exam abdom complete	76700	\$ 142.93	1%	\$ 175.77	1%

**Notes:**

1. 2014 Medicare physician fee schedule non-facility total payment (global)
2. 2014 outpatient prospective payment system
3. Values are rounded

## **INTENSITY MODULATED RADIATION THERAPY (IMRT)**

Intensity modulated radiation therapy (IMRT) is a form of radiation therapy used to treat tumors, cancerous or benign. IMRT is a newer therapy that has been adopted because the radiation can be focused narrowly to the specific area or tumor requiring intervention.

At a composite level, IMRT services have a five-year annualized trend in the AMPB of 2.5%. Figure 11 illustrates utilization and cost metrics for IMRT from 2008 through 2012.

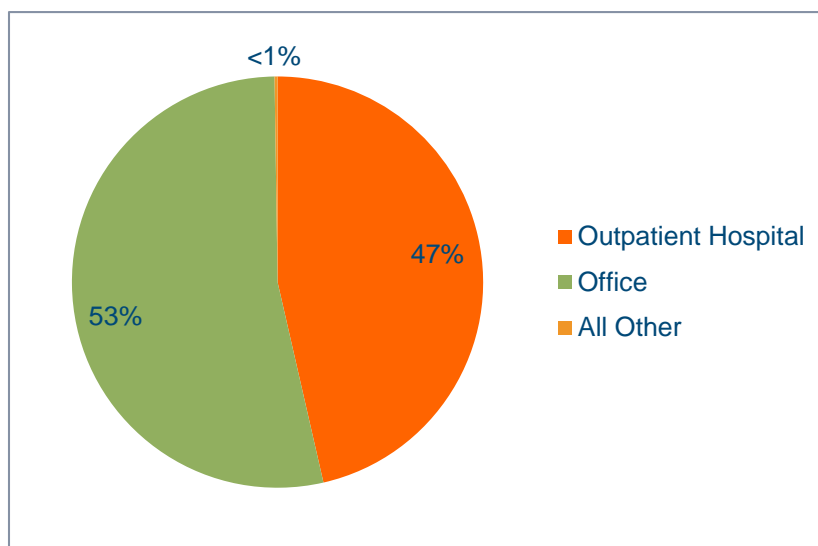
**Figure 11: IMRT Composite Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 3.37	\$ 3.44	\$ 3.71	\$ 4.18	\$ 3.72	2.5%
<b>Utilization per 1,000</b>	79.7	84.1	91.4	98.3	93.4	4.0%
<b>Allowed Charges per Unit</b>	\$ 507.40	\$ 490.84	\$ 487.09	\$ 510.27	\$ 477.94	(1.5%)
<b>Percentage Receiving</b>	0.27%	0.29%	0.29%	0.31%	0.31%	3.5%
<b>Total Allowed Cost *</b>	\$ 1,264.6	\$ 1,284.2	\$ 1,403.3	\$ 1,598.3	\$ 1,438.3	3.3%

\* Value in millions; extrapolated to 100% of fee-for-service population.

Figure 12 illustrates the percentage of the 2012 allowed charges by site of service. IMRT is primarily delivered in the office and outpatient hospital settings.

**Figure 12: IMRT by Site of Service (CY 2012 % of Allowed Charges)**



Figures 13 and 14 illustrate the trend metrics for IMRT by site of service. IMRT in the outpatient hospital setting has a five-year trend in AMPB of approximately 6.6% while the office setting has a (0.3%) trend in AMPB.

**Figure 13: IMRT Outpatient Hospital Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 1.34	\$ 1.45	\$ 1.48	\$ 1.77	\$ 1.73	6.6%
<b>Utilization per 1,000</b>	41.2	41.7	43.5	48.1	47.3	3.5%
<b>Allowed Charges per Unit</b>	\$ 390.29	\$ 417.27	\$ 408.28	\$ 441.58	\$ 438.90	3.0%
<b>Percentage Receiving</b>	0.14%	0.15%	0.15%	0.16%	0.16%	3.4%
<b>Total Allowed Cost *</b>	\$ 503.5	\$ 542.3	\$ 558.7	\$ 678.7	\$ 668.0	7.3%

\* Value in millions; extrapolated to 100% of fee-for-service population.

**Figure 14: IMRT Office Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 2.00	\$ 1.96	\$ 2.21	\$ 2.39	\$ 1.98	(0.3%)
<b>Utilization per 1,000</b>	37.9	41.9	47.5	49.9	45.9	4.9%
<b>Allowed Charges per Unit</b>	\$ 633.25	\$ 561.34	\$ 558.32	\$ 574.75	\$ 517.65	(4.9%)
<b>Percentage Receiving</b>	0.13%	0.14%	0.16%	0.16%	0.15%	3.6%
<b>Total Allowed Cost *</b>	\$ 749.5	\$ 734.0	\$ 837.9	\$ 913.9	\$ 768.0	0.6%

\* Value in millions; extrapolated to 100% of fee-for-service population.

### Other therapeutic radiology

At a composite level, other therapeutic radiology has a five-year annualized trend in the AMPB of 0.5%. Figure 15 illustrates cost and utilization trend metrics by year as well as the five-year trend rate.

**Figure 15: Other Therapeutic Radiology Composite Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 5.90	\$ 6.07	\$ 5.79	\$ 6.06	\$ 6.03	0.5%
<b>Utilization per 1,000</b>	409.9	399.7	381.0	379.3	373.4	(2.3%)
<b>Allowed Charges per Unit</b>	\$ 172.73	\$ 182.24	\$ 182.36	\$ 191.72	\$ 193.79	2.9%
<b>Percentage Receiving</b>	2.55%	2.69%	2.88%	3.03%	3.27%	6.4%
<b>Total Allowed Cost *</b>	\$ 2,216.9	\$ 2,269.1	\$ 2,189.8	\$ 2,318.1	\$ 2,333.8	1.3%

\* Value in millions; extrapolated to 100% of fee-for-service population.

It should be noted that allowed charges per unit as reported in Figure 15 may be influenced by service mix and the setting where the service was provided. Figure 16 has been developed to facilitate an understanding of the variances that are due to each of these items. Figure 16 illustrates what Medicare allows for a service delivered in the outpatient hospital setting versus the physician office setting and the proportion of the total services within each setting represented by that procedure. The services depicted include the top five services by total allowed charges in calendar year 2012 where the service is paid under the Medicare Physician Fee Schedule and the Outpatient Prospective Payment System.

**Figure 16: Top 5 Other Therapeutic Radiology Fees by Site of Service**

American Medical Association Medicare 5% Sample Fee-for-Service Population					
Service	Code	What Medicare Allows in the Office Setting <sup>1</sup>	Procedures as a Percentage of Total Office Setting <sup>3</sup>	What Medicare Allows in the Hospital Outpatient Setting <sup>2</sup>	Procedures as a Percentage of Total Outpatient Hospital Setting <sup>3</sup>
Radiation treatment delivery	77413	\$ 224.25	12%	\$ 192.28	17%
Radiation treatment delivery	77414	\$ 252.55	10%	\$ 192.28	15%
Radiation treatment aid(s)	77334	\$ 150.46	4%	\$ 277.61	5%
Radiation therapy dose plan	77300	\$ 67.35	5%	\$ 146.89	5%
Set radiation therapy field	77290	\$ 507.25	3%	\$ 392.33	3%

**Notes**

1. 2014 Medicare Physician Fee Schedule non-facility total payment (global).
2. 2014 Outpatient Prospective Payment System and the professional component of the physician fee schedule.
3. Values are rounded.

## VI. PHYSICAL THERAPY

Physical therapy is the treatment of disease and injury through physical methods, such as massage and exercise. Appendix 1 includes a full listing of CPT codes used to identify physical therapy services.

The four-year composite AMPB trend for physical therapy services is 1.1%. We used four years of data for our analysis of physical therapy experience, which is due to a data anomaly in 2008. The Medicare 5% Sample did not contain home health agency billings in 2008. Figure 17 illustrates utilization and cost metrics for physical therapy from 2009 through 2012.

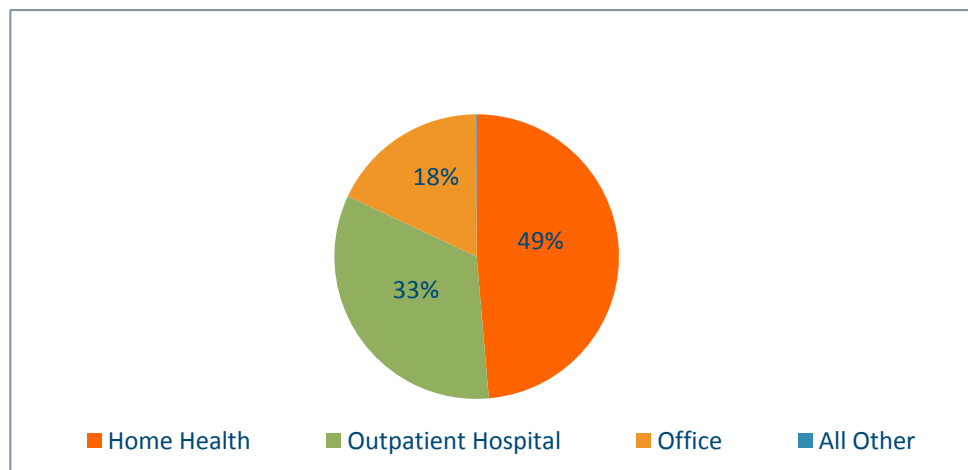
**Figure 17: Physical Therapy Composite Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population					
	CY 2009	CY 2010	CY 2011	CY 2012	4-year Annualized Trend
<b>AMPB</b>	\$ 36.50	\$ 39.04	\$ 38.21	\$ 37.69	1.1%
<b>Utilization per 1,000</b>	6,535.1	6,483.4	6,697.3	6,729.5	1.0%
<b>Allowed Charges per Unit</b>	\$ 67.02	\$ 72.26	\$ 68.46	\$ 67.21	0.1%
<b>Percentage Receiving</b>	19.62%	20.02%	20.29%	20.70%	1.8%
<b>Total Allowed Cost *</b>	\$ 13,641.9	\$ 14,769.2	\$ 14,613.9	\$ 14,582.5	2.2%

\* Value in millions; extrapolated to 100% of fee-for-service population.

Figure 18 illustrates the percentage of CY 2012 AMPB by site of service. Physical therapy is primarily delivered in the home health, outpatient hospital, and office settings.

**Figure 18: Physical Therapy by Site of Service (CY 2012% of allowed charges)**



Figures 19, 20, and 21 illustrate the trend metrics for physical therapy by site of service. Physical therapy in the outpatient hospital and office settings have similar four-year trends in AMPB of approximately 2.7% and 2.8%, respectively. The home health setting has a slightly negative trend at (0.5%).

**Figure 19: Physical Therapy Home Health Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population					
	CY 2009	CY 2010	CY 2011	CY 2012	4-year Annualized Trend
<b>AMPB</b>	\$ 18.63	\$ 20.55	\$ 19.41	\$ 18.33	(0.5%)
<b>Utilization per 1,000</b>	1,144.2	1,228.6	1,212.4	1,190.8	1.3%
<b>Allowed Charges per Unit</b>	\$ 195.39	\$ 200.72	\$ 192.11	\$ 184.72	(1.9%)
<b>Percentage Receiving</b>	6.52%	6.84%	6.89%	6.87%	1.8%
<b>Total Allowed Cost *</b>	\$ 6,963.8	\$ 7,773.1	\$ 7,424.7	\$ 7,092.2	0.6%

\* Value in millions; extrapolated to 100% of fee-for-service population.

**Figure 20: Physical Therapy Outpatient Hospital Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population					
	CY 2009	CY 2010	CY 2011	CY 2012	4-year Annualized Trend
<b>AMPB</b>	\$ 11.62	\$ 11.87	\$ 12.10	\$ 12.57	2.7%
<b>Utilization per 1,000</b>	3,248.8	3,081.6	3,232.5	3,303.9	0.6%
<b>Allowed Charges per Unit</b>	\$ 42.92	\$ 46.22	\$ 44.92	\$ 45.66	2.1%
<b>Percentage Receiving</b>	8.70%	8.73%	8.86%	9.21%	1.9%
<b>Total Allowed Cost *</b>	\$ 4,343.3	\$ 4,491.0	\$ 4,626.9	\$ 4,863.2	3.8%

\* Value in millions; extrapolated to 100% of fee-for-service population.

**Figure 21: Physical Therapy Office Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population					
	CY 2009	CY 2010	CY 2011	CY 2012	4-year Annualized Trend
<b>AMPB</b>	\$ 6.22	\$ 6.59	\$ 6.67	\$ 6.76	2.8%
<b>Utilization per 1,000</b>	2,133.3	2,163.9	2,243.3	2,226.1	1.4%
<b>Allowed Charges per Unit</b>	\$ 34.99	\$ 36.55	\$ 35.68	\$ 36.44	1.4%
<b>Percentage Receiving</b>	7.12%	7.29%	7.43%	7.66%	2.5%
<b>Total Allowed Cost *</b>	\$ 2,324.2	\$ 2,492.6	\$ 2,550.4	\$ 2,615.1	4.0%

\* Value in millions; extrapolated to 100% of fee-for-service population.



## VII. PATHOLOGY AND LABORATORY

Pathology services primarily focus on analyzing and testing tissue and body fluids to diagnose a disease. Appendix 1 includes a complete listing of the codes used to identify the broad category of laboratory and pathology.

At a composite level, pathology and laboratory has a five-year annualized trend in the AMPB of 5.9%. Figure 22 illustrates cost and utilization trend metrics by year as well as the five-year trend rate.

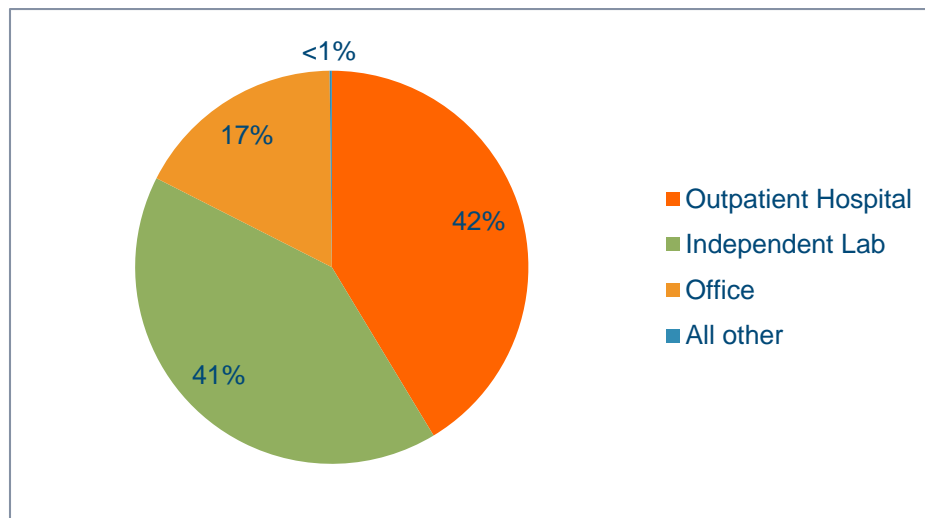
**Figure 22: Pathology and Laboratory Composite Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 24.19	\$ 27.10	\$ 28.21	\$ 29.09	\$ 30.44	5.9%
<b>Utilization per 1,000</b>	20,126.4	20,950.5	21,425.6	21,688.4	22,001.3	2.3%
<b>Allowed Charges per Unit</b>	\$ 14.42	\$ 15.52	\$ 15.80	\$ 16.10	\$ 16.60	3.6%
<b>Percentage Receiving</b>	78.93%	79.93%	79.99%	80.02%	79.97%	0.3%
<b>Total Allowed Cost *</b>	\$ 9,087.7	\$ 10,127.6	\$ 10,672.6	\$ 11,124.1	\$ 11,777.3	6.7%

\* Value in millions; extrapolated to 100% of fee-for-service population.

The majority of pathology and laboratory services are delivered by independent labs, physician offices, and outpatient hospital departments. Figure 23 illustrates the percentage of 2012 allowed charges by site of service.

**Figure 23: Pathology and Laboratory by Site of Service (CY 2012 % of allowed charges)**



Figures 24, 25, and 26 illustrate the trend metrics by each site of service for the pathology and laboratory category. Independent laboratory has the highest five-year annualized AMPB trend at 7.1%. The five-year annualized trend for the AMPB in the outpatient hospital setting is 5.4%. The office setting has the lowest trend for the AMPB at 4.4%

**Figure 24: Pathology and Laboratory Outpatient Hospital Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 10.18	\$ 11.16	\$ 11.53	\$ 12.00	\$ 12.58	5.4%
<b>Utilization per 1,000</b>	8,516.2	8,911.1	9,158.8	9,380.9	9,567.3	3.0%
<b>Allowed Charges per Unit</b>	\$ 14.34	\$ 15.03	\$ 15.11	\$ 15.35	\$ 15.78	2.4%
<b>Percentage Receiving</b>	48.72%	49.70%	50.15%	50.63%	51.03%	1.2%
<b>Total Allowed Cost *</b>	\$ 3,823.4	\$ 4,169.9	\$ 4,360.2	\$ 4,588.9	\$ 4,869.2	6.2%

\* Value in millions; extrapolated to 100% of fee-for-service population.

**Figure 25: Pathology and Laboratory Independent Lab Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 9.53	\$ 10.86	\$ 11.46	\$ 11.85	\$ 12.52	7.1%
<b>Utilization per 1,000</b>	6,734.8	7,079.2	7,361.3	7,504.9	7,766.9	3.6%
<b>Allowed Charges per Unit</b>	\$ 16.98	\$ 18.41	\$ 18.68	\$ 18.95	\$ 19.34	3.3%
<b>Percentage Receiving</b>	47.49%	48.63%	48.80%	48.81%	48.48%	0.5%
<b>Total Allowed Cost *</b>	\$ 3,579.3	\$ 4,057.3	\$ 4,333.7	\$ 4,532.9	\$ 4,844.5	7.9%

\* Value in millions; extrapolated to 100% of fee-for-service population.

**Figure 26: Pathology and Laboratory Office Trends**

American Medical Association Medicare 5% Sample Fee-for-Service Population						
	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	5-year Annualized Trend
<b>AMPB</b>	\$ 4.44	\$ 5.03	\$ 5.18	\$ 5.19	\$ 5.28	4.4%
<b>Utilization per 1,000</b>	4,807.9	4,888.9	4,833.5	4,726.4	4,590.3	(1.2%)
<b>Allowed Charges per Unit</b>	\$ 11.08	\$ 12.35	\$ 12.86	\$ 13.18	\$ 13.80	5.6%
<b>Percentage Receiving</b>	49.09%	49.66%	49.24%	48.83%	48.27%	(0.4%)
<b>Total Allowed Cost *</b>	\$ 1,668.0	\$ 1,879.0	\$ 1,958.5	\$ 1,984.5	\$ 2,042.1	5.2%

\* Value in millions; extrapolated to 100% of fee-for-service population.

## **APPENDIX 1: ANALYSIS CODES FOR RESEARCH**

**American Medical Association**

**Appendix 1: Analysis Codes for Research**

<b><u>Pathology Procedure Codes</u></b>		<b><u>Pathology Revenue Codes</u></b>
88304	G0430	0300
88305	G0431	0301
88307	G0434	0302
88312	G9143	0303
88313	P2028	0304
88342	P2029	0305
36415	P2031	0306
36416	P2033	0307
80047 - 81099	P2038	0309
81200	P7001	0310
81205 - 81229	Q0111	0311
81240 - 81251	Q0112	0312
81255 - 81319	Q0113	0314
81330 - 81408	Q0114	0319
82000 - 82776	Q0115	0923
82784 - 86148	Q3031	0925
86155 - 86431	S2120	0971
86481 - 86688	S3600	
86692 - 86698	S3601	
86704 - 86710	S3618	
86713 - 86826	S3620 - S3630	
86849 - 87385	S3650 - S3890	
87400 - 87533	S9529	
87539 - 89622		
87640 - 87906		
87999 - 88302		
88309		
88311		
88314 - 88334		
88346 - 88372		
88380 - 89240		
ATP02 - ATP23		
G0027		
G0103		
G0265		
G0266		
G0306		
G0307		
G0328		
G0394		

**American Medical Association**

**Appendix 1: Analysis Codes for Research**

**Advanced Imaging  
Procedure Codes**

70450  
70551  
70553  
71250  
71260  
71275  
72141  
72148  
72158  
73221  
73721  
74176  
74177  
74178  
77014  
78815  
70336  
70460 - 70549  
70552  
70554 - 70559  
71270  
71550 - 71555  
72125 - 72133  
72142 - 72147  
72149 - 72157  
72159  
72191 - 72198  
72292  
73200 - 73220  
73222 - 73225  
73700 - 73720  
73722 - 73725  
74150 - 74175  
74181 - 74185  
74261 - 74263  
75552 - 75574  
75635  
76070  
76071  
76093

76094  
76355  
76360  
76362  
76370  
76380  
76390  
76393  
76394  
76400  
76497  
76498  
77011 - 77013  
77021 - 77022  
77058  
77059  
77078  
77079  
77084  
78459  
78491  
78492  
78608  
78609  
78811 - 78816  
G0219  
G0235  
G0252  
G0288  
S8035  
S8037  
S8042  
S8085  
S8092

**Advanced Imaging  
Revenue Codes**

0350  
0351  
0352  
0359  
0404  
0610  
0611  
0612  
0614  
0615  
0616  
0618  
0619

**American Medical Association**

**Appendix 1: Analysis Codes for Research**

**Physical Therapy  
Procedure Codes**

97001 - 97546  
G0283  
92507  
92508  
97750 - 97799  
98925 - 98929  
G0281  
G0282  
G0295  
G0329  
G9041 - G9044  
S8940  
S8990

**Physical Therapy  
Revenue Codes**

0420  
0421  
0422  
0423  
0424  
0429  
0430  
0431  
0432  
0433  
0434  
0439  
0440  
0441  
0442  
0443  
0444  
0449  
0470  
0471  
0472  
0479  
0530  
0531  
0539  
0930  
0931  
0932  
0951  
0952  
0977  
0978  
0979

**Other Therapeutic  
Radiology Procedure  
Codes**

77418  
75900 - 75902  
75945 - 75954  
75960 - 75968  
75978  
76936  
76941  
76942  
76946 - 76965  
77261 - 77417  
77422 - 77799  
79005 - 79999  
S8030  
S8049  
S8055

**American Medical Association**

**Appendix 1: Analysis Codes for Research**

**Other Therapeutic  
Radiology Revenue  
Codes**

0330  
0333  
0339  
0342  
0344  
0973  
0974

**Other Diagnostic  
Radiology Procedure  
Codes**

70010 - 70332  
70350 - 70390  
71010 - 71130  
72010 - 72120  
72170  
72190  
72200 - 72291  
72295 - 73140  
73500 - 73660  
74000 - 74022  
74190 - 74260  
74270 - 74775  
75600 - 75630  
75650 - 75898  
75940  
75956 - 75959  
75970  
75980 - 75996  
75998  
75998  
76000  
76001  
76003  
76005  
76006  
76010  
76012 - 76066  
76075 - 76078  
76080  
76082 - 76092  
76095  
76096  
76098 - 76377  
76496  
76499  
76506 - 76776  
76778  
76800 - 76932

76937  
76940  
76945  
76970 - 76977  
76986  
76998 - 77003  
77031 - 77057  
77071 - 77077  
77080 - 77083  
77421  
78000 - 78011  
78015 - 78070  
78075  
78099  
78102 - 78458  
78460 - 78483  
78494 - 78740  
78760  
78761 - 78808  
78890 - 78999  
G0130  
G0202  
G0204  
G0206  
G0275  
G0278  
G0389  
Q0092  
R0070  
R0075  
R0076  
S8080  
S9024

**American Medical Association**

**Appendix 1: Analysis Codes for Research**

**Other Diagnostic  
Radiology Revenue  
Codes**

0320

0321

0322

0323

0324

0329

0340

0341

0343

0349

0400

0401

0402

0403

0409

0972