

CT and MRI: Regional Variations in Utilization and Reimbursement

Introduction: Imaging operations need to understand current utilization rates and patterns in their local markets to determine their relative rates of exam capture and to plan for future needs. This issue of Imaging Market File looks at national utilization rates (per 1,000 people) for outpatient CT and MRI procedures, according to Thomson Reuters (New York, New York) by age and by region (Table 1) as defined by AHRA: The Association for Medical Imaging Management. Reimbursement rates were based on Medicare outpatient rates from the Medicare Physician Fee Schedule (MPFS) of 2010, 2011, and 2012, and were calculated by averaging regional CPT® code mixes.

Growth stalls: Considering that the US population grew at an annual rate of 0.71% between 2010 and 2011 (Table 2), according to Thomson Reuters, and that the first members of the baby-boom generation—which the US Census Bureau estimates to represent a quarter of the population—turned 65 in 2011, factors other than demographics appear to have stunted growth in medical imaging (Tables 3 and 4).

CT utilization rates are down: The area demonstrating the highest utilization rate for CT is the East South Central region, at 176.78 exams per 1,000 people, with a growth rate of 0.75%—just slightly above national average population growth (Table 5). This region also experienced the largest drop in reimbursement, resulting in an annual decline of 4.56% from 2010 to 2012 (Figure 1). In contrast, the Pacific region comes in with the lowest utilization rate, at 131.96 exams per 1,000 people, and had growth of 0.79% (less than that region's population growth of 1.04%). The West South Central region demonstrates the lowest percentage of utilization change for CT, at 0.58%, while also enjoying the least change as a percentage of reimbursement, at 1.77%

Table 1. AHRA Regions


East North Central	IL, IN, MI, OH, and WI
East South Central	AL, KY, MS, and TN
Middle Atlantic	NJ, NY, and PA
Mountain	AZ, CO, ID, MT, NM, NV, UT, and WY
New England	CT, MA, ME, NH, RI, and VT
Pacific	AK, CA, HI, OR, and WA
South Atlantic	DC, DE, FL, GA, MD, NC, SC, VA, and WV
West North Central	IA, KS, MN, MO, ND, NE, and SD
West South Central	AR, LA, OK, and TX

Table 2. Population, by Region

REGION	2010	2011	GROWTH
East North Central	46,424,906	46,476,373	0.11%
East South Central	18,429,448	18,524,111	0.51%
Middle Atlantic	40,888,867	40,944,782	0.14%
Mountain	22,067,856	22,372,587	1.38%
New England	14,451,285	14,479,399	0.19%
Pacific	49,659,137	50,190,740	1.07%
South Atlantic	59,678,796	60,309,806	1.06%
West North Central	20,500,377	20,576,757	0.37
West South Central	36,269,898	36,672,347	1.11%
Total	308,370,570	310,546,902	0.71%

Table 3. CT Exams per 1,000 People

REGION	2010	2011	GROWTH
East North Central	168.69	169.86	0.69%
East South Central	175.47	176.78	0.75%
Middle Atlantic	172.14	173.31	0.68%
Mountain	140.92	142.3	0.98%
New England	172.64	173.77	0.66%
Pacific	130.92	131.96	0.79%
South Atlantic	166.13	167.64	0.91%
West North Central	157.92	158.83	0.58%
West South Central	139.36	140.49	0.81%
Total	157.01	158.17	0.74%

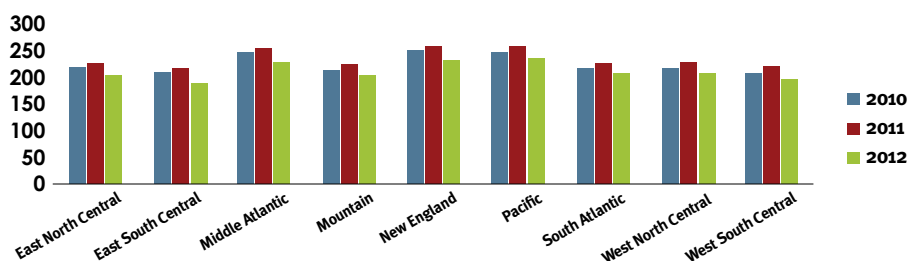


Figure 1. Average reimbursement per CT scan hit a high-water mark in 2011 in all US regions. Overall, reimbursement declined 3.07% per year between 2010 and 2012.

MRI utilization rates: With a 0.41% increase in utilization between 2010 and 2011, the 2.7% annual increase in MRI reimbursement between 2010 and 2012 belies the fact that MRI reimbursement in all regions declined in 2012 (Figure 2).

The high-water mark for CT and MRI reimbursement appears in 2011, when rates for both modalities were highest. The region with the smallest population growth, North Central, had the lowest utilization rate for MRI and the third-lowest MPFS reimbursement. New England displayed the lowest increase in MRI utilization, at 0.19%.

Regional utilization (by age): The Mountain region's utilization-rate growth from 2010 to 2011 exceeded that of all other regions, in every age group, with a total change of 0.96% while the population grew at a rate above the national average, at 1.38% (Table 6). MRI utilization in the Mountain states demonstrated the largest increase from 2010 to 2011 (0.64%) and the biggest three-year annual growth rate (3.37%). Reimbursement rates for 2012 are lower than for 2011, but higher than for 2010.

When each region's utilization growth is compared with its population growth, the data indicate that utilization growth, overall, is being outpaced by population growth.

Table 4. MRI Exams per 1,000 People

REGION	2010	2011	GROWTH
East North Central	77.21	77.47	0.33%
East South Central	82.93	83.21	0.34%
Middle Atlantic	93.73	93.95	0.23%
Mountain	86.73	87.29	0.64%
New England	79.24	79.39	0.19%
Pacific	89.99	90.32	0.37%
South Atlantic	94.19	94.67	0.51%
West North Central	78.21	78.43	0.28%
West South Central	80.53	80.93	0.49%
Total	86.32	86.67	0.41%

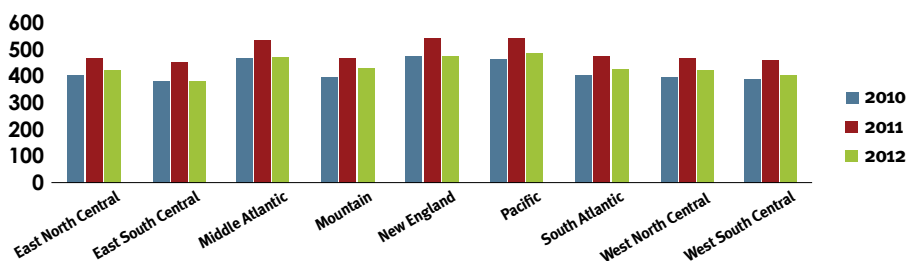


Figure 2. MRI utilization increased 0.41% between 2010 and 2011, and reimbursement increased 2.7% between 2010 and 2012. Between 2011 and 2012, however, MRI reimbursement in all regions declined.

Table 5. CT Exams per 1,000 People, by Region and Age

REGION	AGE	2010	2011	CHANGE
East North Central	< 45	85.18	85.04	-0.16%
	45-64	202.3	203.12	0.4%
	> 64	476.6	475.88	-0.15%
East South Central	< 45	83.22	83.07	-0.18%
	45-64	225.31	226.19	0.39%
	> 64	490.24	490.27	0.01%
Middle Atlantic	< 45	78.81	78.53	-0.35%
	45-64	216.18	216.86	0.32%
	> 64	473.19	472.36	-0.17%
Mountain	< 45	65.52	65.58	0.09%
	45-64	182.49	183.73	0.68%
	> 64	454.99	455.89	0.2%
New England	< 45	89.72	89.38	-0.38%
	45-64	202.52	203.04	0.26%
	> 64	451.81	450.97	-0.19%
Pacific	< 45	62.82	62.68	-0.22%
	45-64	171.78	172.59	0.47%
	> 64	411	410.42	-0.14%
South Atlantic	< 45	76.2	76.07	-0.17%
	45-64	203.56	204.57	0.45%
	> 64	481.71	482.24	0.11%
West North Central	< 45	79.13	78.96	-0.22%
	45-64	191.02	191.94	0.48%
	> 64	439.86	439.51	-0.08%
West South Central	< 45	67.12	67.06	-0.09%
	45-64	188.78	189.66	0.47%
	> 64	446.96	447.52	0.12%

Table 6. MRI Exams per 1,000 People, by Region and Age

REGION	AGE	2010	2011	CHANGE
East North Central	< 45	45.65	45.53	-0.26%
	45-64	116.03	116.36	0.28%
	> 64	141.09	140.92	-0.12%
East South Central	< 45	47.25	47.14	-0.23%
	45-64	128.41	128.71	0.23%
	> 64	153.81	153.76	-0.03%
Middle Atlantic	< 45	54.32	54.01	-0.57%
	45-64	142.86	143.1	0.17%
	> 64	162.25	162.01	-0.15%
Mountain	< 45	50.93	50.99	0.13%
	45-64	137.55	138.34	0.58%
	> 64	172	172.45	0.26%
New England	< 45	47.55	47.24	-0.65%
	45-64	116.23	116.33	0.08%
	> 64	134.45	134.19	-0.2%
Pacific	< 45	54.36	54.19	-0.3%
	45-64	141.58	142.03	0.32%
	> 64	171.2	170.87	-0.2%
South Atlantic	< 45	52.78	52.66	-0.23%
	45-64	142.46	142.94	0.34%
	> 64	181.37	181.54	0.09%
West North Central	< 45	45.76	45.64	-0.27%
	45-64	117.42	117.85	0.36%
	> 64	144.84	144.81	-0.02%
West South Central	< 45	46.42	46.37	-0.1%
	45-64	131.91	132.41	0.37%
	> 64	165.87	166.07	0.12%

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