

VARIATIONS IN TREATMENT COSTS AND QUALITY AMONG 24 URBAN AREAS

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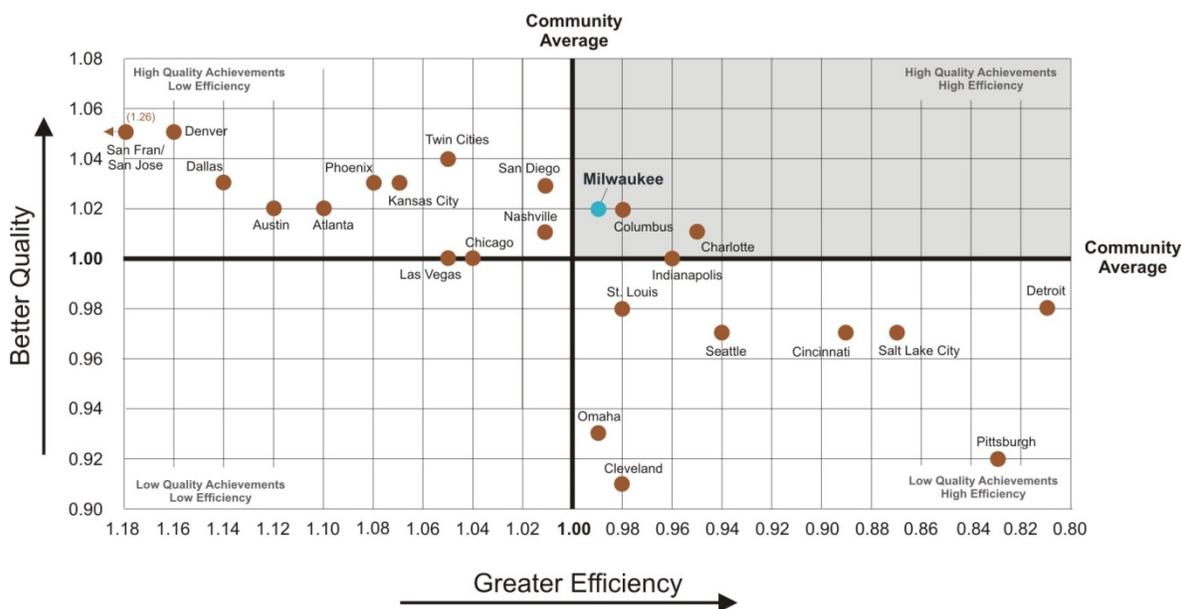
EXECUTIVE SUMMARY

HCTrends and BSG Analytics LLC compared 24 urban areas, including Milwaukee, using a cost-per-episode approach to calculate the relative cost of providing care for 22 major practice categories (MPC). The study also measured differences in the utilization of health care services for selected conditions and compared providers' abilities to comply with evidence-based medicine (EBM) treatment standards in each of the markets.

GENERAL FINDINGS

- ▶ Only three of the cities analyzed – Milwaukee, Columbus and Charlotte – had both below-average treatment costs and above-average compliance with quality protocols

Quality Compliance/Cost-Efficiency Matrix



- ▶ Health care costs are impacted both by practice patterns and geography:
 - Most cities have either consistently high or consistently low medical costs when measured at the major practice category (MPC) level, which suggests that geography drives the variation in health care costs
 - When selected conditions are analyzed, most cities have high treatment costs for some conditions and low treatment costs for other conditions, which suggests that variations in practice patterns impact health care costs
- ▶ Because the medical conditions that drive health care costs vary from city to city, identifying and targeting high-cost conditions could be an effective way to bring a community’s health care costs in line with the national average
- ▶ High-cost cities tend to be better at complying with quality protocols

MILWAUKEE-SPECIFIC FINDINGS

- ▶ When measured on a cost-per-episode basis, Milwaukee’s health care costs are one (1) percent lower than the average of the 24 cities analyzed
- ▶ Milwaukee’s health care quality is two (2) percent above the average of the 24 cities analyzed
- ▶ Orthopedic conditions, including back pain, neck pain and knee/lower leg issues, are among Milwaukee’s principal cost drivers
- ▶ Milwaukee providers are among the most cost-efficient in treating diabetes, obesity, migraine headaches and depression

TABLE 1. COST-PER-EPISODE INDEX	
City	Index
San Francisco	1.26
Denver	1.16
Dallas	1.14
Austin	1.12
Atlanta	1.10
Phoenix	1.08
Kansas City	1.07
Las Vegas	1.05
Minneapolis/St. Paul	1.05
Chicago	1.04
Nashville	1.01
San Diego	1.01
Omaha	0.99
Milwaukee	0.99
Columbus	0.98
St. Louis	0.98
Indianapolis	0.96
Charlotte	0.95
Seattle	0.94
Cincinnati	0.91
Cleveland	0.89
Salt Lake City	0.87
Pittsburgh	0.83
Detroit	0.81

BACKGROUND

Several studies have compared Milwaukee's health care costs to other urban areas using a per-member-per-month (PMPM) cost methodology that factors in the overall utilization of health care services and the unit price paid for the services provided. These studies are useful for comparing the overall cost of providing care between urban areas, but they do not measure the *efficacy* of the medical care provided. They also do not take into account market variations in disease prevalence. For example, while the Milwaukee and Austin/San Antonio markets have comparable populations, Austin has 43 percent more asthma episodes while Milwaukee has 43 percent more obesity-related episodes.¹ These variations make it difficult to accurately compare costs using just a PMPM methodology.

A more meaningful approach is to compare the cost of treating an asthma episode in Milwaukee with the cost of treating an asthma episode in Austin, or the cost of treating an obesity-related episode in Austin with an obesity-related episode in Milwaukee. These cost-per-episode comparisons measure how efficiently physician, inpatient and outpatient services are utilized. If health care providers overprescribe tests or fail to properly manage a disease or condition, their per-episode treatment costs will be high; providers that coordinate care and successfully implement evidence-based care management protocols will have lower per-episode treatment costs.

This study compares 24 urban areas, using the cost-per-episode approach to:

- Identify the cost of providing care in 22 major practice categories (MPCs)
- Calculate an average cost per episode for 20 base episode treatment groups (ETGs)
- Determine whether cities tend to be consistently "high-cost" or "low-cost" cities

In addition, the study analyzes the ability of providers to comply with evidence-based medicine (EBM) treatment standards for the selected base ETGs.

METHODOLOGY

HCTrends compared the 24 metropolitan statistical areas (MSAs) it analyzed in its previous studies on health care costs. HCTrends worked closely with the Metropolitan Milwaukee Association of Commerce and the Milwaukee 7 economic development collaborative to choose the cities. Selected demographic information for each of the cities is included in the appendix.

The analysis was conducted using 2009, 2010 and 2011 commercial data from insurers and self-funded employers included in the OptumInsight Impact database. Optum Symmetry Episode Treatment Group software was used to group the claims data into specific episodes. Each completed episode includes all of the inpatient, outpatient, pharmacy and ancillary treatment costs incurred from the point of initial

¹ Based on the episodes included in this analysis

diagnosis through the completion of treatment.² The results are based on 45.5 million completed episodes representing \$14.5 billion in allowed dollars.

Cost-per-episode results for each urban area were indexed against the 24-city median with 1.00 representing the 24-city median. A community index greater than 1.00 indicates above-average treatment costs, while an index less than 1.00 indicates below-average treatment costs. The indices were then sorted by cost and divided into quartiles for comparison purposes.

Two different cost analyses were conducted:

- A comparison of per-episode treatment costs for the 22 MPCs
- A comparison of per-episode treatment costs for 20 selected base ETGS

² For acute-care episodes, treatment is considered complete when no claims have been filed for a 30-day period; for diabetes and other chronic conditions, a completed episode includes all of the claims filed in a calendar year.

MAJOR PRACTICE CATEGORIES

Every medical diagnosis is linked to one of 22 major practice categories (MPCs), which represent specific body systems and/or physician specialties. Table 2 shows the number of completed episodes for each MPC and the money paid to providers in the 24 cities analyzed.

Using the OptumInsight Impact Database, BSG Analytics LLC calculated per-episode costs for each MPC in the cities analyzed. Each city was then indexed against the 24-city average per-episode cost for individual MPCs. Cities with indices above 1.00 had above-average costs for that MPC; cities with indices below 1.00 had below-average costs for that MPC.

The individual MPC indices were aggregated to create a composite index that measures the overall cost-efficiency of the treatments provided in each community.³

GENERAL FINDINGS

- ▶ Aggregated per-episode costs in the least-expensive city (Detroit) were 36 percent lower than the per-episode costs in the most-expensive city (San Francisco)
- ▶ Seventeen of the 24 cities analyzed were consistently high-cost or consistently low-cost cities⁴
- ▶ Five cities – Atlanta, Austin, Dallas, Denver and San Francisco – were in the most-expensive quartile for most MPCs
- ▶ Four cities – Cincinnati, Detroit, Pittsburgh and Salt Lake City – were in the least-expensive quartile for most MPCs

TABLE 2. MAJOR PRACTICE CATEGORIES		
Major Practice Category	Completed Episodes	Allowed Dollars
Cardiology	1,472,136	\$490,652,671
Chemical Dependency	193,299	\$64,521,046
Dermatology	6,292,402	\$1,099,690,310
Endocrinology	1,076,278	\$1,555,458,412
Gastroenterology	2,545,852	\$1,625,785,378
Gynecology	1,752,860	\$1,078,395,349
Hematology	258,225	\$86,744,773
Hepatology	185,237	\$331,185,518
Infectious Diseases	630,216	\$68,517,515
Isolated Signs & Symptoms	1,314,730	\$83,347,242
Environmental Trauma & Poisonings	190,721	\$64,620,255
Neonatology	182,348	\$188,446,452
Nephrology	54,947	\$20,001,283
Neurology	1,083,663	\$624,312,771
Obstetrics	143,111	\$716,721,188
Ophthalmology	3,090,940	\$531,700,177
Orthopedics & Rheumatology	4,372,295	\$2,334,021,538
Otolaryngology	7,935,347	\$1,210,243,978
Preventive & Administrative	8,889,704	\$1,063,470,069
Psychiatry	414,171	\$164,545,413
Pulmonology	1,912,560	\$431,509,474
Urology	1,479,749	\$640,689,368
TOTAL	45,478,114	\$14,485,044,484

³ The aggregate index is the average for the MPC indices in each city.

⁴ In a consistently high-cost city, the per-episode costs were above-average (>1.00) in at least 15 of the 22 MPCs; in a consistently low-cost city, the per-episode costs were below average (<1.00) in at least 15 of the MPCs.

- ▶ In seven MPCs, the variation in per-episode costs was greater than 20 percent for most cities:
 - Cardiology
 - Chemical Dependency
 - Environmental Trauma & Poisonings
 - Hematology
 - Infectious Diseases
 - Neonatology
 - Nephrology (kidney diseases)
- ▶ Neonatology had the greatest variation in treatment costs; per-episode costs in the least-expensive city (Pittsburgh) were 78 percent lower than the per-episode costs in the highest-cost city (Dallas)
- ▶ The variation in per-episode costs was less than 10 percent for most cities in only one MPC – endocrinology (diabetes)
- ▶ Endocrinology also had the least variation in treatment costs; per-episode costs in the least-expensive city (Charlotte) were 29 percent below the highest-cost city (Omaha)

MILWAUKEE-SPECIFIC FINDINGS

- ▶ Overall, Milwaukee’s per-episode treatment costs were 1 percent below the 24-city average
- ▶ Milwaukee had below-average treatment costs in 14 MPCs, average treatment costs in two MPCs, and above-average treatment costs in six MPCs
- ▶ Milwaukee’s treatment costs were in the most-expensive quartile for one MPC – ophthalmology – with per-episode costs 8 percent above the 24-city average
- ▶ Milwaukee was in the least-expensive quartile for five MPCs:
 - Chemical Dependency
 - Isolated Signs and Symptoms
 - Dermatology
 - Endocrinology
 - Neurology

TABLE 3. MILWAUKEE INDEXED TO 24-CITY AVERAGE	
Major Practice Category	Index
Cardiology	1.09
Ophthalmology	1.08
Gastroenterology	1.05
Environmental Trauma & Poisonings	1.04
Orthopedics	1.03
Urology	1.01
Gynecology	1.00
Hepatology	1.00
Hematology	0.99
Obstetrics	0.99
Preventive & Administrative	0.98
Psychiatry	0.97
Otolaryngology	0.96
Pulmonology	0.96
Neonatology	0.95
Endocrinology	0.93
Neurology	0.93
Nephrology	0.92
Dermatology	0.91
Isolated Signs & Symptoms	0.90
Infectious Diseases	0.81
Chemical Dependency	0.71

BASE ETGS

The Symmetry software aggregates claim costs for diagnoses and procedures using ICD-9 and CPT codes. Each diagnosis starts an episode treatment group (ETG) that includes all of the services provided for that diagnosis. These ETGs are aggregated into base ETGs that represent particular conditions (diabetes, high blood pressure, neck pain, etc.). HCTrends compared per-episode treatment costs for 20 base ETGs as outlined in Table 4. These base ETGs represented 11 percent of the completed episodes and 25 percent of the total allowed dollars for the claims analyzed.⁵

Per-episode treatment costs were calculated for base ETGs in each city included in the analysis. Each city was then indexed against the median per-episode cost for each base ETG. Cities with indices greater than 1.00 have above-average costs for that base ETG; cities with indices less than 1.00 had below-average costs for that base ETG.

GENERAL FINDINGS

- ▶ Most cities are high-cost cities for treating some conditions, but low-cost cities for treating other conditions, which suggests that health care costs may be driven by variations in practice patterns; Milwaukee, for example, is one of the more expensive cities for treating bipolar disorder with treatment costs 62 percent above average but is a low-cost city for treating depression with per-episode treatment costs 16 percent below average
- ▶ Variations in treatment costs tend to narrow as treatment costs increase, which could be an indication that disease management and other cost-containment

TABLE 4. BASE ETGS INCLUDED IN THE ANALYSIS		
	Allowed Dollars	Completed Episodes
COMMON CHRONIC CONDITIONS		
Asthma	\$87 million	165,454
Diabetes	\$1.3 billion	104,600
High Cholesterol (Hyperlipidemia)	\$14 million	72,679
High Blood Pressure (Hypertension)	\$20 million	55,278
Ischemic Heart Disease	\$18 million	9,962
Multiple Sclerosis	\$21 million	2,451
Obesity	\$41 million	101,739
Parkinson's Disease	\$185,100	542
ORTHOPEDIC PROCEDURES		
Back Pain	\$181 million	115,402
Knee/Lower Leg Degeneration	\$103 million	91,027
Knee/Lower Leg Derangement	\$235 million	70,264
Neck Pain	\$110 million	66,930
ACUTE CONDITIONS		
Migraine Headaches	\$126 million	338,523
Pregnancy with Delivery	\$634 million	105,645
Tonsillitis, Adenoiditis or Pharyngitis (Strep Throat)	\$316 million	2.5 million
CANCER CONDITIONS		
Breast Cancer	\$31 million	5,416
Prostate Cancer	\$21 million	5,377
Skin Cancer	\$50 million	28,651
BEHAVIORAL CONDITIONS		
Bipolar Mood Disorder	\$2.1 million	1,458
Depression	\$21 million	34,386

⁵ Excluding routine exams, inoculations and non-specified diagnoses

initiatives have been successful; bipolar disorder had the greatest variation in treatment costs, diabetes had the least variation

- ▶ Cities have different cost drivers – specific base ETGs that significantly impacted their health care costs
 - In Milwaukee, the primary cost drivers are neck pain, back pain and knee/lower leg issues
 - In Minneapolis/St. Paul, the primary cost drivers are migraines, tonsillitis and asthma

MILWAUKEE FINDINGS

- ▶ Milwaukee had above-average per-episode costs for half of the selected base ETGs, average treatment costs for two base ETGs and below-average costs for eight base ETGs

- ▶ Milwaukee’s treatment costs were in the most-expensive quartile for four conditions:

- Bipolar Disorder
- Neck Pain
- Heart Disease
- Back Pain

- ▶ Milwaukee’s treatment costs were in the least-expensive quartile for six conditions:

- Multiple Sclerosis⁶
- Migraines
- Obesity
- Depression
- Skin Cancer
- Diabetes

TABLE 5. MILWAUKEE COSTS RELATIVE TO 24-CITY AVERAGE	
Bipolar Disorder	1.62
Neck Pain	1.20
Heart Disease	1.12
Back pain	1.10
Knee Derangement	1.10
Knee Degeneration	1.07
Asthma	1.04
Breast Cancer	1.03
Prostate Cancer	1.02
Tonsillitis	1.02
Cholesterol	1.00
Hypertension	1.00
Pregnancy with Delivery	0.99
Diabetes	0.96
Skin Cancer (Major)	0.90
Depression	0.84
Parkinson’s	0.82
Obesity	0.80
Migraine Headaches	0.79
Multiple Sclerosis	0.57

⁶ The small number of completed episodes for this condition may skew results.

QUALITY COMPLIANCE

HCTrends also measured provider compliance with evidence-based medicine (EBM) protocols for each of the selected base ETGs. EBMs are protocols that have been proven to be effective based on clinical trials and other rigorous studies. The primary source for EBM protocols is the Agency for Healthcare Research and Quality (AHRQ). HCTrends analyzed 45 million compliance opportunities to calculate a quality-compliance index for each urban area. Cities with indices greater than 1.00 have above-average quality compliance, while cities with indices less than 1.00 had below-average quality compliance.

FINDINGS

- ▶ Of the 42 million compliance opportunities analyzed, health care providers complied with treatment standards 63 percent of the time
- ▶ Cities with above-average treatment costs tended to have above-average compliance rates, while cities with below-average treatment costs tended to have below-average compliance rates
- ▶ There was significantly less variation in compliance with quality protocols than there was in treatment costs
- ▶ Denver and San Francisco had the highest compliance rate (66 percent)
- ▶ Cleveland had the lowest compliance rate (58 percent)
- ▶ Milwaukee had a compliance rate of 64 percent

TABLE 6. QUALITY COMPLIANCE INDEX	
City	Index
Denver	1.05
San Francisco	1.05
Minneapolis/St. Paul	1.04
Dallas	1.03
Kansas City	1.03
Phoenix	1.03
San Diego	1.03
Atlanta	1.02
Austin	1.02
Columbus	1.02
Milwaukee	1.02
Charlotte	1.01
Nashville	1.01
Chicago	1.00
Indianapolis	1.00
Las Vegas	1.00
Detroit	0.98
Seattle	0.98
St. Louis	0.98
Cincinnati	0.97
Salt Lake City	0.97
Omaha	0.93
Pittsburgh	0.92
Cleveland	0.91

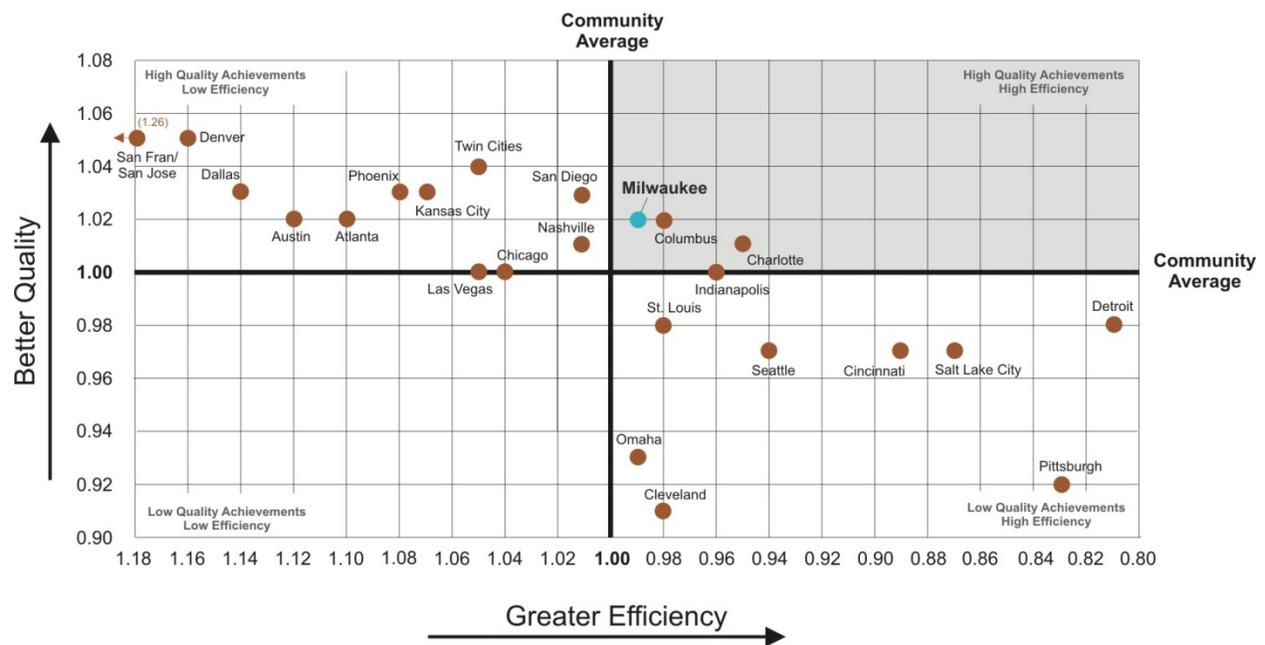
COMBINING COST-EFFICIENCY & QUALITY

Cost-efficiency and quality are different, but equally important measures. In order to compare the 24 cities in their achievement of both, HCTrends charted each city's cost-efficiency and quality indices. Cost-efficiency is mapped on the X-axis; Quality compliance is mapped on the Y-axis. Low-cost, high-quality cities are located in the upper-right quadrant, while high-cost, low-quality cities are located in the lower-left quadrant.

FINDINGS

- ▶ Most cities are either high-cost, high-quality cities or low-cost, low-quality cities; this suggests a correlation between quality and treatment cost
- ▶ Only three cities – Milwaukee, Columbus and Charlotte – had both above-average quality and below-average treatment costs
- ▶ None of the cities analyzed had below-average quality and above-average treatment costs

Quality Compliance/Cost-Efficiency Matrix



APPENDIX

DEMOGRAPHIC COMPARISONS				
Metropolitan Statistical Area	Population ¹	Educational Attainment ²	Median Earnings ³	Percent of Labor Force in Manufacturing ⁴
Atlanta	5.4 million	34.0%	\$37,399	7.2%
Austin/San Antonio	1.6 million	38.3%	\$36,671	7.9%
Charlotte	1.7 million	31.9%	\$35,435	9.5%
Chicago	9.6 million	32.4%	\$39,600	10.6%
Cincinnati	2.2 million	27.9%	\$36,000	11.6%
Cleveland	2.1 million	26.6%	\$34,800	13.3%
Columbus	1.8 million	32.3%	\$37,000	8.2%
Dallas	4.2 million	29.7%	\$35,831	10.1%
Denver	2.5 million	36.6%	\$38,817	5.8%
Detroit	4.4 million	26.3%	\$37,800	13.1%
Indianapolis	1.7 million	30.5%	\$36,100	10.7%
Kansas City	2.1 million	31.5%	\$36,800	8.1%
Las Vegas	1.9 million	21.3%	\$31,282	5.3%
MILWAUKEE	1.5 million	30.3%	\$37,000	15.5%
Minneapolis/St. Paul (Twin Cities)	3.3 million	37.0%	\$41,900	11.2%
Nashville	1.1 million	28.7%	\$34,309	10.4%
Omaha	1.2 million	31.6%	\$35,200	7.2%
Phoenix	4.3 million	27.3%	\$29,669	7.2%
Pittsburgh	2.3 million	28.0%	\$33,532	8.9%
Salt Lake City	1.1 million	29.8%	\$27,542	8.6%
San Diego	3.0 million	34.0%	\$31,354	7.8%
San Francisco	4.3 million	43.2%	\$41,770	6.9%
Seattle	3.3 million	36.7%	\$36,985	10.8%
St. Louis	2.8 million	18.0%	\$36,100	9.1%

¹ 2008 Census estimates
² Percent of population >25 years with at least a college degree (2008 Census Survey)
³ Median earnings >25 years of age (2008 Census Survey)
⁴ 2007 Bureau of Labor Statistics Establishment Data (annual average)

PER-TREATMENT COSTS – MAJOR PRACTICE CATEGORIES

CARDIOLOGY	
Austin	1.20
Atlanta	1.13
Phoenix	1.12
Twin Cities	1.12
Chicago	1.12
Kansas City	1.11
MILWAUKEE	1.09
Nashville	1.08
Las Vegas	1.04
Denver	1.04
Indianapolis	1.04
San Francisco	1.01
St. Louis	0.99
Dallas	0.98
Charlotte	0.97
Columbus	0.96
Cleveland	0.95
Omaha	0.91
Seattle	0.86
Cincinnati	0.86
Salt Lake City	0.84
San Diego	0.81
Pittsburgh	0.71
Detroit	0.72

CHEMICAL DEPENDENCY	
San Francisco	1.50
Denver	1.45
Austin	1.33
Kansas City	1.27
Las Vegas	1.27
Phoenix	1.23
Twin Cities	1.18
Dallas	1.12
Chicago	1.08
Atlanta	1.08
San Diego	1.07
Charlotte	1.00
Nashville	1.00
St. Louis	0.97
Indianapolis	0.96
Cincinnati	0.92
Columbus	0.91
Cleveland	0.90
Salt Lake City	0.88
Seattle	0.87
Detroit	0.82
Pittsburgh	0.82
MILWAUKEE	0.71
Omaha	0.67

DERMATOLOGY	
San Francisco	1.27
Dallas	1.16
Phoenix	1.13
Denver	1.12
Austin	1.12
Atlanta	1.11
Las Vegas	1.11
Kansas City	1.11
Twin Cities	1.10
Salt Lake City	1.05
Chicago	1.02
San Diego	1.00
Nashville	1.00
Omaha	0.98
Charlotte	0.97
St. Louis	0.97
Indianapolis	0.95
Columbus	0.93
Cincinnati	0.92
MILWAUKEE	0.91
Detroit	0.91
Seattle	0.90
Cleveland	0.87
Pittsburgh	0.79

ENDOCRINOLOGY	
Omaha	1.17
Twin Cities	1.12
Pittsburgh	1.07
San Diego	1.07
Indianapolis	1.06
San Francisco	1.05
Columbus	1.04
Denver	1.04
Cincinnati	1.04
Austin	1.02
Dallas	1.00
Chicago	1.00
Seattle	1.00
Las Vegas	0.99
Atlanta	0.99
Kansas City	0.98
St. Louis	0.96
Nashville	0.96
Salt Lake City	0.94
Cleveland	0.94
Detroit	0.94
MILWAUKEE	0.93
Phoenix	0.93
Charlotte	0.84

GASTROENTEROLOGY	
San Francisco	1.21
Denver	1.19
Dallas	1.16
Atlanta	1.11
Kansas City	1.10
Austin	1.09
MILWAUKEE	1.05
Chicago	1.04
St. Louis	1.03
Las Vegas	1.01
Twin Cities	1.01
Nashville	1.00
Phoenix	1.00
Omaha	0.98
Charlotte	0.94
Indianapolis	0.93
Columbus	0.92
Seattle	0.90
Cincinnati	0.87
San Diego	0.86
Cleveland	0.84
Detroit	0.82
Pittsburgh	0.81
Salt Lake City	0.72

GYNECOLOGY	
Denver	1.14
San Francisco	1.14
Atlanta	1.08
Kansas City	1.08
Nashville	1.08
Austin	1.07
Phoenix	1.07
Dallas	1.06
Indianapolis	1.03
San Diego	1.02
Charlotte	1.01
MILWAUKEE	1.00
Chicago	1.00
Twin Cities	1.00
Columbus	0.95
Cleveland	0.95
Seattle	0.94
St. Louis	0.94
Las Vegas	0.93
Omaha	0.93
Cincinnati	0.91
Detroit	0.87
Pittsburgh	0.86
Salt Lake City	0.72

HEMATOLOGY	
Denver	1.94
Austin	1.34
Twin Cities	1.26
Phoenix	1.23
Kansas City	1.20
San Francisco	1.16
Las Vegas	1.14
Chicago	1.11
Nashville	1.06
Cincinnati	1.05
Indianapolis	1.04
Atlanta	1.00
St. Louis	1.00
Omaha	0.99
MILWAUKEE	0.99
Dallas	0.91
Pittsburgh	0.91
San Diego	0.89
Salt Lake City	0.85
Columbus	0.85
Charlotte	0.84
Cleveland	0.83
Seattle	0.79
Detroit	0.71

HEPATOLOGY	
Denver	1.21
San Francisco	1.15
Austin	1.11
Kansas City	1.10
Twin Cities	1.10
Omaha	1.06
Atlanta	1.05
Indianapolis	1.04
Phoenix	1.04
Nashville	1.04
Dallas	1.02
MILWAUKEE	1.00
San Diego	1.00
Charlotte	0.98
Columbus	0.97
Las Vegas	0.94
Chicago	0.94
Cincinnati	0.89
St. Louis	0.86
Seattle	0.86
Cleveland	0.81
Salt Lake City	0.73
Pittsburgh	0.72
Detroit	0.68

INFECTIOUS DISEASES	
Denver	1.71
San Francisco	1.46
Kansas City	1.45
Atlanta	1.30
Austin	1.28
Twin Cities	1.26
Dallas	1.24
Phoenix	1.02
Charlotte	1.01
Omaha	1.01
Columbus	1.01
Nashville	1.00
Las Vegas	1.00
Seattle	0.94
Salt Lake City	0.91
Cleveland	0.85
St. Louis	0.84
MILWAUKEE	0.81
San Diego	0.80
Chicago	0.78
Cincinnati	0.74
Pittsburgh	0.69
Indianapolis	0.64
Detroit	0.61

NEONATOLOGY	
Dallas	2.61
Austin	2.07
Las Vegas	1.87
Atlanta	1.66
Seattle	1.55
Nashville	1.37
St. Louis	1.37
Denver	1.22
Phoenix	1.16
San Francisco	1.10
Cincinnati	1.10
Indianapolis	1.05
MILWAUKEE	0.95
Salt Lake City	0.92
Kansas City	0.90
Charlotte	0.89
Twin Cities	0.86
Chicago	0.84
Omaha	0.81
Columbus	0.70
San Diego	0.69
Cleveland	0.67
Detroit	0.59
Pittsburgh	0.59

NEPHROLOGY	
Austin	1.51
Charlotte	1.42
Denver	1.41
Twin Cities	1.40
Phoenix	1.36
Kansas City	1.27
Dallas	1.19
Chicago	1.17
Las Vegas	1.12
Atlanta	1.08
Cincinnati	1.05
Columbus	1.02
San Francisco	0.98
Seattle	0.96
St. Louis	0.95
Omaha	0.93
Cleveland	0.92
MILWAUKEE	0.92
Salt Lake City	0.90
Nashville	0.88
Pittsburgh	0.82
San Diego	0.78
Indianapolis	0.74
Detroit	0.51

NEUROLOGY	
San Francisco	1.58
Dallas	1.33
Austin	1.29
Denver	1.27
Twin Cities	1.22
Kansas City	1.20
Phoenix	1.15
Atlanta	1.14
Columbus	1.07
Las Vegas	1.03
San Diego	1.01
Charlotte	1.01
Chicago	0.99
Nashville	0.99
Salt Lake City	0.99
Omaha	0.97
Cleveland	0.96
St. Louis	0.96
Seattle	0.96
MILWAUKEE	0.93
Pittsburgh	0.92
Indianapolis	0.90
Cincinnati	0.88
Detroit	0.82

OBSTETRICS	
San Francisco	1.25
Phoenix	1.20
Chicago	1.12
Seattle	1.12
Denver	1.10
Las Vegas	1.09
San Diego	1.07
Austin	1.06
Dallas	1.06
Atlanta	1.04
Kansas City	1.02
St. Louis	1.01
Nashville	0.99
MILWAUKEE	0.99
Twin Cities	0.99
Cleveland	0.98
Charlotte	0.97
Indianapolis	0.97
Omaha	0.96
Pittsburgh	0.96
Cincinnati	0.95
Columbus	0.94
Salt Lake City	0.91
Detroit	0.90

OPHTHALMOLOGY	
San Francisco	1.46
Chicago	1.17
Las Vegas	1.12
Dallas	1.10
Atlanta	1.09
MILWAUKEE	1.08
Phoenix	1.05
Indianapolis	1.05
San Diego	1.05
Denver	1.03
Seattle	1.01
Austin	1.00
Kansas City	1.00
St. Louis	0.99
Nashville	0.97
Omaha	0.95
Cleveland	0.95
Pittsburgh	0.92
Charlotte	0.90
Columbus	0.89
Twin Cities	0.89
Salt Lake City	0.87
Cincinnati	0.86
Detroit	0.84

ORTHOPEDICS	
San Francisco	1.23
Denver	1.16
Phoenix	1.15
Dallas	1.15
Chicago	1.08
Austin	1.08
Las Vegas	1.08
Kansas City	1.07
MILWAUKEE	1.03
Atlanta	1.02
San Diego	1.01
Nashville	1.00
Columbus	1.00
St. Louis	0.94
Omaha	0.94
Indianapolis	0.91
Twin Cities	0.91
Charlotte	0.90
Cincinnati	0.87
Seattle	0.84
Cleveland	0.83
Salt Lake City	0.81
Pittsburgh	0.76
Detroit	0.73

OTOLARYNGOLOGY	
San Francisco	1.30
Denver	1.17
Austin	1.12
Dallas	1.12
Atlanta	1.10
Las Vegas	1.09
Twin Cities	1.06
Kansas City	1.04
Indianapolis	1.04
Nashville	1.00
Chicago	1.00
Seattle	1.00
San Diego	1.00
Columbus	0.98
Phoenix	0.98
Omaha	0.96
MILWAUKEE	0.96
St. Louis	0.96
Charlotte	0.95
Cincinnati	0.94
Cleveland	0.91
Salt Lake City	0.88
Detroit	0.86
Pittsburgh	0.85

PREVENTIVE & ADMIN	
San Francisco	1.33
Twin Cities	1.13
San Diego	1.13
Las Vegas	1.10
Salt Lake City	1.09
Denver	1.05
Atlanta	1.05
Dallas	1.04
Austin	1.03
Phoenix	1.01
Kansas City	1.01
Nashville	1.00
Omaha	1.00
St. Louis	0.99
MILWAUKEE	0.98
Chicago	0.95
Columbus	0.93
Charlotte	0.92
Cincinnati	0.89
Indianapolis	0.89
Detroit	0.85
Cleveland	0.81
Pittsburgh	0.80
Seattle	0.78

PSYCHIATRY	
San Francisco	1.36
Denver	1.31
Atlanta	1.28
Austin	1.21
Twin Cities	1.21
Dallas	1.15
Kansas City	1.09
Chicago	1.04
Phoenix	1.03
Cincinnati	1.02
Omaha	1.02
Seattle	1.00
Columbus	1.00
San Diego	0.99
St. Louis	0.98
MILWAUKEE	0.97
Charlotte	0.92
Nashville	0.90
Salt Lake City	0.88
Indianapolis	0.88
Las Vegas	0.83
Cleveland	0.81
Detroit	0.79
Pittsburgh	0.73

PULMONOLOGY	
Denver	1.35
Dallas	1.23
Atlanta	1.21
Austin	1.17
Las Vegas	1.17
San Francisco	1.15
Kansas City	1.13
Twin Cities	1.12
Phoenix	1.10
Nashville	1.05
Omaha	1.03
Chicago	1.00
Columbus	1.00
St. Louis	0.97
Indianapolis	0.97
MILWAUKEE	0.96
Charlotte	0.95
Cleveland	0.95
Cincinnati	0.92
Salt Lake City	0.91
Pittsburgh	0.85
Seattle	0.85
San Diego	0.79
Detroit	0.74

UROLOGY	
San Francisco	1.49
Atlanta	1.17
Dallas	1.15
Denver	1.15
Las Vegas	1.13
Phoenix	1.11
Austin	1.10
Twin Cities	1.08
Chicago	1.07
Nashville	1.05
Kansas City	1.03
MILWAUKEE	1.01
Omaha	0.99
Columbus	0.99
Seattle	0.97
Indianapolis	0.96
Charlotte	0.95
St. Louis	0.94
San Diego	0.91
Cleveland	0.88
Cincinnati	0.86
Detroit	0.78
Pittsburgh	0.74
Salt Lake City	0.70

ISOLATED SIGNS & SYMPTOMS	
Dallas	1.20
Denver	1.18
Omaha	1.15
Austin	1.13
Columbus	1.13
Cincinnati	1.09
St. Louis	1.06
Cleveland	1.06
Las Vegas	1.04
Pittsburgh	1.01
Chicago	1.00
Salt Lake City	1.00
Indianapolis	1.00
Nashville	0.99
Kansas City	0.98
San Francisco	0.97
Twin Cities	0.97
Charlotte	0.95
Phoenix	0.95
Detroit	0.95
MILWAUKEE	0.90
Atlanta	0.89
San Diego	0.80
Seattle	0.75

ENVIRONMENTAL TRAUMA & POISONINGS	
Denver	1.23
San Diego	1.20
San Francisco	1.16
Austin	1.14
Nashville	1.12
Atlanta	1.12
Dallas	1.08
Salt Lake City	1.08
Kansas City	1.04
MILWAUKEE	1.04
Columbus	1.03
Charlotte	1.00
Twin Cities	1.00
Cleveland	0.95
Chicago	0.91
Seattle	0.89
Phoenix	0.87
Las Vegas	0.87
St. Louis	0.86
Omaha	0.84
Cincinnati	0.81
Indianapolis	0.76
Pittsburgh	0.70
Detroit	0.68

PER-TREATMENT COSTS – SELECTED BASE ETGS

ASTHMA		CHOLESTEROL		DIABETES		HEART DISEASE		HYPERTENSION	
Denver	1.40	Denver	1.55	Pittsburgh	1.10	Dallas	1.46	Twin Cities	1.43
Twin Cities	1.39	Twin Cities	1.39	Seattle	1.06	Salt Lake City	1.22	San Francisco	1.35
San Francisco	1.32	Omaha	1.31	Indianapolis	1.05	Austin	1.21	Kansas City	1.31
Omaha	1.25	San Francisco	1.27	Las Vegas	1.05	Phoenix	1.17	Omaha	1.27
Austin	1.15	Cincinnati	1.14	Omaha	1.04	MILWAUKEE	1.12	Atlanta	1.24
Columbus	1.12	Austin	1.11	Nashville	1.03	Columbus	1.12	Austin	1.19
Atlanta	1.11	Kansas City	1.07	San Francisco	1.03	Twin Cities	1.07	Denver	1.18
Kansas City	1.11	Salt Lake City	1.05	San Diego	1.02	Atlanta	1.03	Dallas	1.16
Cincinnati	1.04	Dallas	1.04	Atlanta	1.01	Chicago	1.02	Nashville	1.16
MILWAUKEE	1.04	Atlanta	1.03	Dallas	1.01	Kansas City	1.01	Chicago	1.05
Indianapolis	1.01	Columbus	1.03	Denver	1.01	St. Louis	1.00	Phoenix	1.03
St. Louis	1.00	MILWAUKEE	1.00	Austin	1.00	Cincinnati	1.00	Salt Lake City	1.00
Dallas	1.00	Seattle	1.00	Charlotte	1.00	Denver	1.00	MILWAUKEE	1.00
Pittsburgh	0.97	Phoenix	0.87	Detroit	0.99	Indianapolis	0.96	Seattle	0.97
Chicago	0.97	Chicago	0.77	Chicago	0.97	Cleveland	0.94	Cincinnati	0.95
Nashville	0.95	Indianapolis	0.77	Columbus	0.97	Nashville	0.91	St. Louis	0.94
Salt Lake City	0.95	Charlotte	0.76	Cleveland	0.97	Charlotte	0.83	Las Vegas	0.92
Phoenix	0.92	St. Louis	0.76	Twin Cities	0.97	Las Vegas	0.83	Columbus	0.92
Cleveland	0.91	San Diego	0.69	Cincinnati	0.96	Seattle	0.77	San Diego	0.89
Las Vegas	0.89	Nashville	0.63	MILWAUKEE	0.96	Omaha	0.72	Indianapolis	0.88
Charlotte	0.89	Cleveland	0.63	Phoenix	0.94	San Diego	0.68	Charlotte	0.86
Seattle	0.86	Las Vegas	0.60	St. Louis	0.93	Detroit	0.51	Pittsburgh	0.86
Detroit	0.84	Detroit	0.59	Kansas City	0.91	San Francisco	0.49	Cleveland	0.84
San Diego	0.69	Pittsburgh	0.54	Salt Lake City	0.86	Pittsburgh	0.40	Detroit	0.67

MULTIPLE SCLEROSIS	
Twin Cities	2.02
Denver	1.76
Pittsburgh	1.59
Salt Lake City	1.55
Austin	1.50
Kansas City	1.40
San Diego	1.33
Omaha	1.18
Columbus	1.14
Charlotte	1.10
San Francisco	1.07
Chicago	1.03
Atlanta	0.97
Detroit	0.76
St. Louis	0.74
Seattle	0.72
Dallas	0.69
Nashville	0.69
Cleveland	0.59
Cincinnati	0.57
MILWAUKEE	0.57
Indianapolis	0.51
Phoenix	0.43
Las Vegas	0.25

OBESITY	
Austin	1.23
Dallas	1.23
San Francisco	1.17
Denver	1.16
Charlotte	1.09
Cincinnati	1.08
Phoenix	1.05
St. Louis	1.04
Seattle	1.04
Omaha	1.02
Columbus	1.01
Kansas City	1.00
San Diego	1.00
Salt Lake City	0.98
Atlanta	0.97
Pittsburgh	0.93
Indianapolis	0.91
Nashville	0.90
Twin Cities	0.88
Las Vegas	0.87
Chicago	0.87
Cleveland	0.83
MILWAUKEE	0.80
Detroit	0.69

PARKINSON'S	
Pittsburgh	3.78
Seattle	3.25
San Diego	2.82
Atlanta	2.55
Omaha	2.51
Cleveland	2.41
Austin	2.15
Chicago	1.31
St. Louis	1.17
Denver	1.12
Columbus	1.10
Nashville	1.01
Cincinnati	0.99
Twin Cities	0.90
Dallas	0.90
Indianapolis	0.84
MILWAUKEE	0.82
Kansas City	0.81
Las Vegas	0.55
Charlotte	0.54
Salt Lake City	0.51
Phoenix	0.27
San Francisco	0.09
Detroit	0.06

MIGRAINE HEADACHES	
Twin Cities	1.41
Austin	1.41
Denver	1.31
San Francisco	1.30
Atlanta	1.29
Kansas City	1.25
Seattle	1.11
Dallas	1.09
Columbus	1.05
Nashville	1.05
Omaha	1.02
Cincinnati	1.02
Las Vegas	0.98
Salt Lake City	0.98
Phoenix	0.97
Charlotte	0.96
Chicago	0.96
Indianapolis	0.93
Pittsburgh	0.91
Detroit	0.90
St. Louis	0.89
Cleveland	0.85
San Diego	0.84
MILWAUKEE	0.79

PREGNANCY WITH DELIVERY	
San Francisco	1.25
Phoenix	1.21
Seattle	1.15
Denver	1.10
Chicago	1.10
Las Vegas	1.08
Dallas	1.06
Austin	1.06
San Diego	1.05
Atlanta	1.04
St. Louis	1.01
Kansas City	1.01
Nashville	0.99
MILWAUKEE	0.99
Cleveland	0.98
Twin Cities	0.98
Omaha	0.96
Indianapolis	0.96
Charlotte	0.96
Cincinnati	0.95
Salt Lake City	0.94
Pittsburgh	0.94
Columbus	0.94
Detroit	0.90

TONSILLITIS	
San Francisco	1.41
Las Vegas	1.25
Denver	1.16
Dallas	1.14
San Diego	1.13
Austin	1.11
Twin Cities	1.11
Chicago	1.08
Kansas City	1.04
Indianapolis	1.03
MILWAUKEE	1.02
Phoenix	1.01
Atlanta	0.99
St. Louis	0.96
Cleveland	0.96
Seattle	0.96
Omaha	0.95
Charlotte	0.95
Nashville	0.95
Detroit	0.94
Cincinnati	0.91
Pittsburgh	0.91
Salt Lake City	0.86
Columbus	0.83

BREAST CANCER	
Seattle	1.40
San Diego	1.36
San Francisco	1.34
Phoenix	1.34
Atlanta	1.26
Detroit	1.16
Nashville	1.11
Dallas	1.10
Indianapolis	1.09
Denver	1.05
Cleveland	1.03
MILWAUKEE	1.03
Chicago	0.97
Charlotte	0.97
Columbus	0.94
Austin	0.91
Kansas City	0.89
Omaha	0.89
Cincinnati	0.87
St. Louis	0.84
Twin Cities	0.81
Pittsburgh	0.66
Salt Lake City	0.66
Las Vegas	0.65

PROSTATE CANCER	
San Francisco	1.75
Atlanta	1.44
Denver	1.34
San Diego	1.31
Las Vegas	1.26
Pittsburgh	1.20
Austin	1.19
Phoenix	1.14
Cleveland	1.14
Indianapolis	1.07
MILWAUKEE	1.02
St. Louis	1.01
Chicago	0.99
Dallas	0.94
Columbus	0.91
Kansas City	0.91
Nashville	0.91
Seattle	0.91
Detroit	0.87
Charlotte	0.86
Cincinnati	0.82
Twin Cities	0.80
Salt Lake City	0.52
Omaha	0.43

SKIN CANCER (MAJOR)	
San Francisco	1.37
Dallas	1.19
Atlanta	1.18
Kansas City	1.16
Columbus	1.12
Twin Cities	1.09
Phoenix	1.09
Austin	1.05
Denver	1.04
St. Louis	1.03
San Diego	1.01
Seattle	1.00
Cincinnati	1.00
Omaha	0.96
Salt Lake City	0.94
Chicago	0.92
Las Vegas	0.92
Detroit	0.91
MILWAUKEE	0.90
Charlotte	0.90
Indianapolis	0.90
Nashville	0.88
Cleveland	0.86
Pittsburgh	0.76

BACK PAIN	
Dallas	1.37
Denver	1.19
Austin	1.16
Chicago	1.13
Kansas City	1.11
MILWAUKEE	1.10
Indianapolis	1.10
Phoenix	1.07
Nashville	1.06
Atlanta	1.05
San Francisco	1.05
Omaha	1.01
St. Louis	0.99
Columbus	0.98
Charlotte	0.91
Cincinnati	0.91
Las Vegas	0.90
Twin Cities	0.89
Cleveland	0.87
San Diego	0.86
Detroit	0.83
Seattle	0.82
Salt Lake City	0.80
Pittsburgh	0.72

NECK PAIN	
Dallas	1.22
MILWAUKEE	1.20
Denver	1.19
Indianapolis	1.17
Nashville	1.17
Chicago	1.12
Phoenix	1.11
Columbus	1.09
Charlotte	1.07
Atlanta	1.03
St. Louis	1.02
Austin	1.02
San Diego	0.98
Omaha	0.97
Cincinnati	0.96
Kansas City	0.95
San Francisco	0.90
Las Vegas	0.90
Pittsburgh	0.82
Cleveland	0.81
Detroit	0.79
Seattle	0.77
Twin Cities	0.76
Salt Lake City	0.73

KNEE DEGENERATION	
San Francisco	1.51
Phoenix	1.19
Las Vegas	1.15
Denver	1.14
Atlanta	1.11
Dallas	1.10
Kansas City	1.09
San Diego	1.09
MILWAUKEE	1.07
Nashville	1.07
Chicago	1.02
St. Louis	1.00
Austin	1.00
Cincinnati	0.98
Twin Cities	0.96
Columbus	0.96
Omaha	0.94
Charlotte	0.88
Indianapolis	0.85
Pittsburgh	0.81
Seattle	0.81
Cleveland	0.79
Detroit	0.75
Salt Lake City	0.73

KNEE DERANGEMENT	
San Francisco	1.69
Dallas	1.26
Denver	1.24
Las Vegas	1.19
Chicago	1.17
Phoenix	1.13
MILWAUKEE	1.10
San Diego	1.10
Kansas City	1.07
Nashville	1.06
Austin	1.06
Atlanta	1.04
Omaha	0.96
Columbus	0.94
St. Louis	0.93
Indianapolis	0.93
Charlotte	0.93
Twin Cities	0.90
Cincinnati	0.90
Cleveland	0.88
Detroit	0.85
Seattle	0.81
Pittsburgh	0.81
Salt Lake City	0.69

BIPOLAR DISORDER	
San Francisco	2.55
MILWAUKEE	1.62
Seattle	1.52
Phoenix	1.42
Denver	1.38
Dallas	1.31
Columbus	1.22
Cincinnati	1.21
Kansas City	1.18
Austin	1.17
Twin Cities	1.06
San Diego	1.01
Omaha	0.99
Indianapolis	0.93
Atlanta	0.89
Nashville	0.89
Chicago	0.84
Las Vegas	0.79
Charlotte	0.75
Salt Lake City	0.61
Cleveland	0.56
St. Louis	0.54
Detroit	0.32
Pittsburgh	0.26

DEPRESSION	
San Francisco	1.88
Denver	1.52
Austin	1.38
Atlanta	1.34
Twin Cities	1.23
Kansas City	1.14
Omaha	1.13
Dallas	1.13
Phoenix	1.07
Columbus	1.07
Nashville	1.05
Salt Lake City	1.04
Cincinnati	0.96
St. Louis	0.94
Chicago	0.93
Seattle	0.92
San Diego	0.91
Indianapolis	0.87
Cleveland	0.87
Las Vegas	0.86
MILWAUKEE	0.84
Charlotte	0.76
Pittsburgh	0.61
Detroit	0.59