

BY ROSS DEVOL

**The United States** is widely regarded as an international leader in pharmaceuticals, biotechnology and medical devices, as well as a top provider of specialized health care services. For proof, look no further than choices of the rich and the famous – everyone from Saudi princes to European jetsetters – who regularly seek out American physicians and hospitals in search of the latest and best in medical care.

The seriously ill may flock to Boston or Houston. Others may head to Los Angeles for a nip and a tuck – what San Jose is to silicon, LA is to silicone.\* Yet, while a host of cities have great reputations for medicine, there has been surprisingly little effort to quantify the impact of health care on local economies.

For the past few decades, the health care sector – we include everything from hospitals to pharmaceuticals to medical insurance – has been among the fastest growing in the industrialized world. No surprise there; health care consuming seniors will account for 30 percent of the US population in a decade, while Japan and Western Europe are aging even more rapidly. The over-65 population world-



wide is expected to grow from 600 million in 2000 to over one billion by 2020.

Health care consumption has doubled as a percentage of US GDP since 1970, and the growth continues apace. Indeed, biotech and biomedicine may lead the economy in coming decades, the way information technology led the latter half of the 20th century. And there is an important race under way to determine which locations will dominate.

\* OK, OK. Only mass tort lawyers see opportunities in silicone anymore, but I couldn't resist the word play.

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**TOP HEALTH CARE INDUSTRY REGIONS  
RANKED BY EMPLOYMENT CONCENTRATION, 2001**

RANK	REGION	LOCATION QUOTIENT	% OF REGION'S TOTAL EMPLOYMENT	EMPLOYMENT (thousands)
1	New England	1.25	11.4	800.97
2	Middle Atlantic	1.23	11.2	2,054.19
3	West North Central	1.05	9.6	946.93
4	East North Central	1.03	9.3	2,053.90
5	West South Central	0.92	8.4	1,191.11
6	East South Central	0.92	8.4	636.70
7	South Atlantic	0.92	8.3	2,065.76
8	Pacific	0.87	7.9	1,592.88
9	Mountain	0.85	7.7	664.80

**REGIONAL CONCENTRATION**

New England and the Middle Atlantic states currently stand out in terms of sector-specific concentration. Health care directly contributed 7.5 percent of New England's gross regional product in 2001, roughly one-tenth more than the average. This is impressive when you consider that health care is largely consumed locally; "exports" of specialized medical expertise are purchased only by the most affluent. These figures, of course, understate the ultimate contribution of health care to the New England economy, since the secondary effects of health care outlays ripple through the regional economy.

New England is even more closely linked to the health care sector when concentration is measured in employment. In 2001, more than 800,000 New Englanders held jobs in the sector.

The mid-Atlantic states are a close second to New England with an employment concentration index of 1.23 (that is, 23 percent above the national average) and total health care sector jobs number close to 2.1 million.

**STATE CONCENTRATION**

Among states, Pennsylvania has the highest concentration of health care employment, at 31 percent above the national average. Pennsylvania's strengths are in drugs, medical devices and the hospital sector.

Rhode Island ties Massachusetts for second place, with 29 percent greater than average health care employment concentration. All six New England states are above the average – and, strikingly, five are in the top 10. New Jersey is fourth, owing its lofty position to the technology side of health care: pharmaceuticals, biotechnology and medical devices. Indeed, New Jersey has the highest concentration of pharmaceutical employment in the nation, with nearly five times the average.

North Dakota is sixth in concentration mainly due to its top ranking in hospitals and nursing facilities. West Virginia ranks eighth, principally due to its second-place rank in hospitals.

Vermont (ninth overall) is first in health and allied services, and sixth in home health care services. New York is first in total health

**STATE HEALTH CARE CONCENTRATION**

Pennsylvania	1.31	Ohio	1.10	District of Columbia	0.98	North Carolina	0.87
Rhode Island	1.29	Maryland	1.07	Iowa	0.97	California	0.86
Massachusetts	1.29	Delaware	1.07	Michigan	0.97	Arizona	0.86
New Jersey	1.29	Montana	1.06	Arkansas	0.97	Oregon	0.86
Connecticut	1.26	New Hampshire	1.05	Indiana	0.96	Virginia	0.84
North Dakota	1.26	Indiana	1.03	Tennessee	0.95	Colorado	0.83
Maine	1.20	Florida	1.02	Washington	0.95	Hawaii	0.82
West Virginia	1.19	Wisconsin	1.01	Louisiana	0.95	Mississippi	0.79
Vermont	1.16	Missouri	1.01	Oklahoma	0.95	Georgia	0.77
New York	1.14	Illinois	1.01	Kansas	0.94	Alaska	0.71
Minnesota	1.14	United States (all)	1.00	Texas	0.91	South Carolina	0.70
South Dakota	1.12	Kentucky	0.99	Utah	0.90	Nevada	0.63
Nebraska	1.10	New Mexico	0.99	Alabama	0.88	Wyoming	0.55

care employment (with 900,000 workers) and 10th in overall concentration.

### METROPOLITAN AREA HEALTH POLES

The Milken Institute created the Health Pole Index for metro areas (MSAs) as a way of offering a more comprehensive measure of the impact of the health care industry. Rankings are based on a combination of relative and absolute rankings – an MSA’s concentration of health care employment relative to the nation as a whole, and its share of national health care industry output. The metro area with the highest composite score is assigned a benchmark score of 100. The principles behind this method were introduced with the Milken Institute’s mapping of metropolitan “tech poles” in 1999 – the first of its kind. The tech-pole concept is detailed in *America’s High-Tech Economy: Growth, Development and Risks for Metropolitan Areas* (available for \$15 in paper, or download free from [www.milkeninstitute.com](http://www.milkeninstitute.com)).

Tech-pole scores capture the spatial intensity of a variety of technology-driven sectors. The health-pole index (and the individual industry health-pole scores, available on our Web site) captures the spatial intensity of the health care industry.

In light of New England’s commanding presence in health care, it should be no surprise that the region’s largest MSA, Boston, is the top health pole. It is a center for both biotechnology and medical device research and commercialization. Genzyme and Biogen serve as its biotech anchors. The MSA boasts three top-rated medical schools (Boston University, Tufts and Harvard), while Massachusetts General Hospital is the sixth-largest employer in Boston.

The New York metro is a very close second. New York is first in hospital employment and in the top 10 in several other categories. The

### TOP 20 METROPOLITAN AREAS BY HEALTH POLE TOTAL HEALTH CARE EMPLOYMENT, 2001

METROPOLITAN AREA	HEALTH POLE
Boston, MA-NH	100.00
New York, NY	99.85
Philadelphia, PA-NJ	97.53
Chicago, IL	92.20
Los Angeles-Long Beach, CA	55.10
Washington, DC-MD-VA-WV	48.18
Detroit, MI	44.09
Nassau-Suffolk, NY	40.66
Newark, NJ	39.49
Minneapolis-St. Paul, MN-WI	36.29
Pittsburgh, PA	36.26
Baltimore, MD	33.55
St. Louis, MO-IL	32.12
Cleveland-Lorain-Elyria, OH	31.23
Houston, TX	31.03
New Haven-Meriden, CT	31.00
San Diego, CA	24.85
Rochester, MN	23.46
Tampa-St. Petersburg-Clearwater, FL	23.46
Miami, FL	22.74

Big Apple has some of the top teaching hospitals in the country and is a leader in clinical trials. The New York Presbyterian Healthcare Network is the top employer in the metro area.

## INSTITUTE VIEW

The Philadelphia MSA places a strong third on the index with lofty rankings in drugs, medical services and health insurance, and hospitals. Merck employs 11,000 and Wyeth has 6,300 on staff in the metro area. A remarkable seven out of the top 10 employers in the Philadelphia area are in health care related firms.

Chicago is fourth overall (by being first in medical services and health insurance and third in hospitals). Hospitals alone employ more than 150,000 people in Chicago, making it the top employment sector in the MSA.

Los Angeles is a distant fifth with strength in physicians' offices, dentists and medical laboratories. Cedars-Sinai Medical Center has a staff of 8,600. Much of the research leading to the first commercially successful biotechnology therapy was conducted at the City of Hope's facilities. The metro area is, of course, home to some of the world's preeminent plastic surgeons. Kaiser Permanente, the giant HMO, is the largest employer in the Los Angeles MSA.

The Washington, DC metro area ranks sixth overall. It is home to the National Institutes of Health (15,400 employees) and many other key health care research and advocacy groups. The human genome code was mapped in the Washington MSA. The city's biotech sector is large and expanding rapidly, ranking Washington first in the nation in research and testing services.

Detroit has also become a major player in health care services, ranking seventh in our Health Pole Index. The MSA owes its prominent position to hospitals and osteopathic physicians. The Nassau-Suffolk MSA on Long Island is eighth. The MSA's top employer is a health care services firm, the North Shore-Long Island Jewish Health System.

Newark owes its rank (ninth overall) to its

top ranking as a pharmaceutical center. Merck, Schering-Plough and Pfizer are among the top employers. Minneapolis-St. Paul rounds out the top 10. Allina Health Systems is the third-largest employer in the region.

Pittsburgh ranks 11th. The University of Pittsburgh Health System employs 31,000 workers, making it the MSA's biggest employer. West Penn Allegheny is Pittsburgh's second-largest employer. Anchored by Johns Hopkins, Baltimore is an important center for hospitals – which explains its 12th ranking. St. Louis' placement at 13 is attributable to hospitals and nursing and personal care facilities. Cleveland (14th) is home to the world-renowned Cleveland Clinic, which is the MSA's largest employer (23,400).

Houston (15th) has one of the world's leading cancer-research institutes, the University of Texas' M.D. Anderson Cancer Center. New Haven-Meriden, Conn. is 16th with a major teaching hospital (Yale), and strength in medical instruments and drugs. No fewer than 11 of this MSA's top-20 employers are in the health care industry.

San Diego's ranking at 17 is largely due to its strength in biotech, in which it is second only to Washington, DC. San Diego is home to Scripps Research Institute as well as biotech firms including Nanogen and Ligand. Rochester, Minnesota (18th) is on the map thanks to the Mayo Clinic, which accounts for an astounding 27 percent of the MSA's total employment. Tampa's retiree population explains its position at 19th. Ditto for Miami, which ranks 20th and is home to Jackson Memorial Hospital.

Note that only three MSAs in the West (Los Angeles, Houston and San Diego) make the top 20, while the Northeast corridor has six of the top 10. Just what that bodes for the long-term health of the regions (pun intended) is anyone's guess. **M**