

ACEC Private Industry Brief

Health Care & Science+Technology

December 2018 | January 2019

Market Scope

For engineering firms, the health care (HC) and science+technology (S+T) markets are large and steadily growing, with \$43 billion in HC construction estimated for 2018, growing to \$49 billion by 2022. More than 626 health care systems and 5,500 hospitals are in the United States. Besides hospitals, facility types include outpatient centers and medical office buildings (MOBs), as well as laboratory, production and administrative space for pharmaceutical, biotechnology, and university clients. A wide range of engineering services are provided to these clients, often with specialized needs related to mechanical/electrical, HVAC and commissioning. Capital spending is increasingly focused on renovations and infrastructure upgrades.

Top Clients

The list below features the top 10 largest U.S. Integrated Delivery Networks (IDN) ranked by number of facilities, as well as headquarters locations. An IDN is a health care network that incorporates many different building types including hospitals, outpatient centers, and nursing/assisted living facilities.

1. **Ascension Health** St. Louis, MO: 2,116 facilities (fac.)
2. **HCA Healthcare** Nashville, TN: 1,807 facilities
3. **Catholic Health Initiatives** Englewood, CO: 1,560 fac.
4. **Veterans Health Admin.** Washington, DC: 1,504 fac.
5. **Community Health Systems** Franklin, TN: 1,467 fac.
6. **Providence Saint Joseph Health** Renton, WA: 1,424 fac.
7. **Trinity Health** Livonia, MI: 1,384 facilities
8. **Select Medical Corp.** Mechanicsburg, PA: 1,289 facilities
9. **UPMC** Pittsburgh, PA: 1,020 facilities
10. **Mercy Health** Cincinnati, OH: 903 facilities

Source: IQVIA

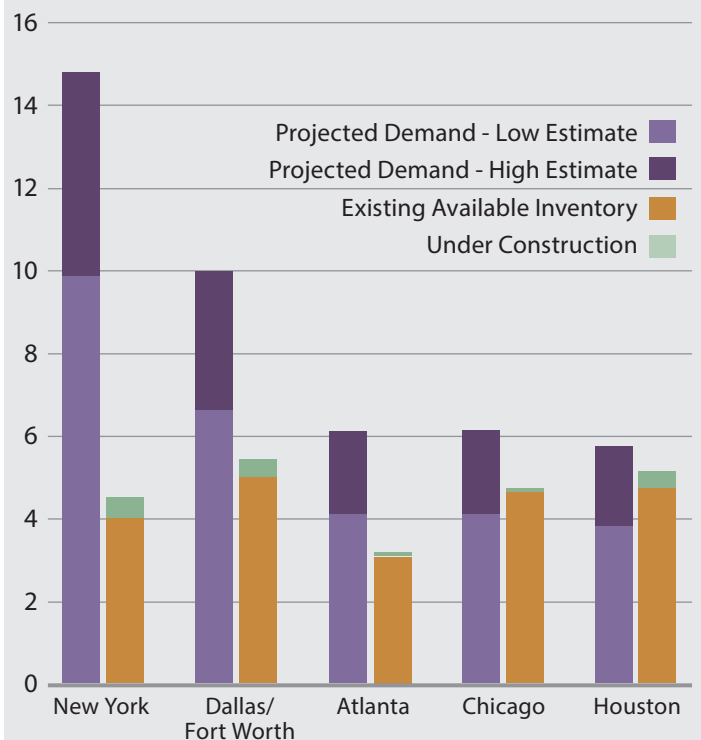
5 Current Market Trends

- **1. Demographic Drivers:** Spending on health care in the United States has skyrocketed. According to the U.S. Centers for Medicare and Medicaid Services (CMS) spending on personal HC totaled about \$217 billion in 1980, but by 2016 (latest year data are available) that soared more than 1,000% to \$2.84 trillion. Factors contributing to this include government programs and technical advances, but one key driver is the sheer number of people. The population is growing faster than our economy as a whole.

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MOBs: Demand is Outpacing Supply

2019 Top 5 Markets by Demand (millions of square feet)



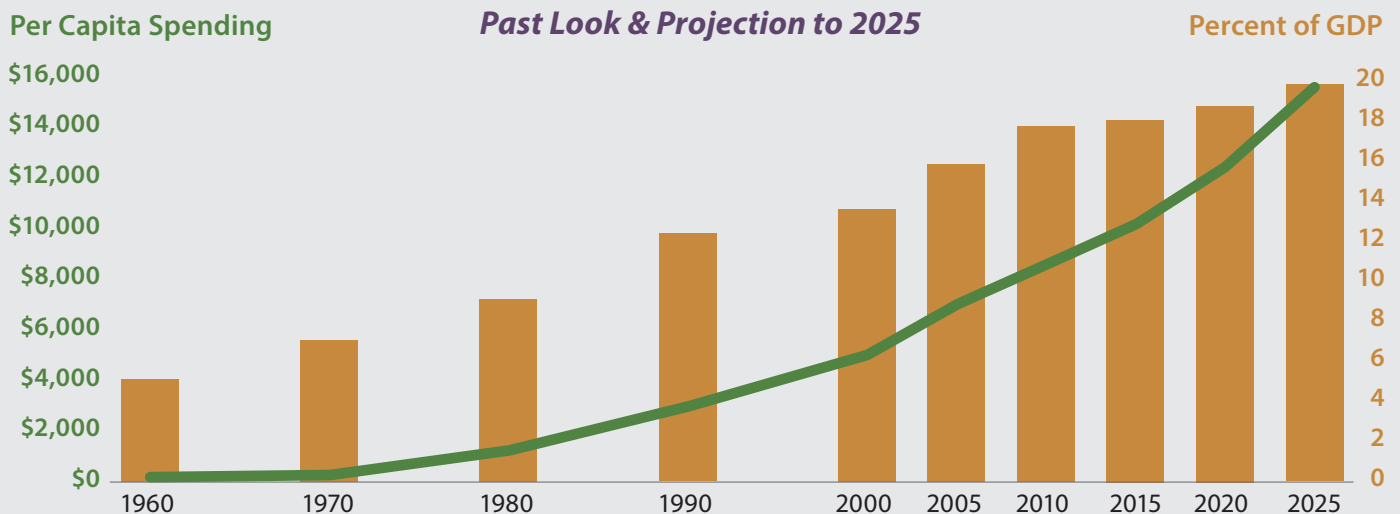
Source: Transwestern, CoStar, EMSI, Revista, Bureau of Labor Statistics

Current Market Trends, *continued*

At the end of 2017, the number of people in the U.S. aged 65 or older topped 50 million for the first time, with this age group—which visits medical professionals more often than any other—comprising a record 15.6% of the population. In just the last 10 years, this 65+ population has increased more than 34.5%, compared to an increase of just 4.3% for those under 65. Growth is not distributed evenly across the U.S., with some cities and states in the U.S. South and Southwest growing faster.

- ▶ **2. Reaching into Communities:** The combination of HC practitioners wanting to be where the patients are, and the need to care for people outside of expensive hospital environments, has resulted in a trend towards smaller, more community-oriented facilities. The 2018 Industry Pulse Survey by *Medical Construction & Design Magazine* confirms this: "Outpatient facilities and MOBs are leading the way in terms of building activity with 88% of respondents indicating they are building this type of project either the same or more, followed by specialty clinics (e.g. heart, cancer center, behavioral, etc.) at 81 percent." Mall owners have found themselves with new tenant types as urgent care centers, clinics, labs and even microhospitals set up in declining retail spaces, which are often well-located in dense population areas with floor plates that can accommodate heavy medical equipment. The further 'retailing' of the HC industry is also evident by CVS Health Corp.'s acquisition of Aetna Inc. and its plans to invest more than \$2 billion to further build and modify stores into "healthcare hubs"; there are already more than 1,000 CVS Minute Clinics.
- ▶ **3. Resiliency:** With U.S. natural catastrophes becoming more frequent, resiliency planning and design has become a priority for HC and S+T clients. In the 2018 Hospital Construction Survey by *Health Facilities Management Magazine*, HC executives named power outages (80%), fires (53%) and winter storms (42%) as the top three priorities in building for resiliency. The process often starts with hazard-vulnerability assessments, and follows with design measures that may include moving generators to higher floors, installing watertight storm gates and windows with hurricane-force glass, and converting to wireless (vs. underground hardwiring) technology. California and Florida have adopted specific codes and design criteria concerning impact facility glazing, floodplains, and locations of key infrastructure components.
- ▶ **4. Designing for Positive Experiences:** HC and S+T facilities are being designed with an eye on patient and employee experiences, and flexibility for future modification. Design strategies include incorporating natural light into patient and laboratory spaces, providing attractive site lines for employee collaboration, hiding technical infrastructure (such as retractable cords in ceilings), and incorporating heavy-duty floor slabs throughout buildings for flexibility in converting space and moving equipment in the future.
- ▶ **5. Telehealth:** The increasing use of telehealth is expected to result in more individualized and efficient HC management; its impact on facilities is not yet clear. Telehealth is defined as the "interactive, electronic exchange of information for the purpose of diagnosis, intervention, or ongoing care management between a patient and/or health care providers situated remotely" by the Advisory Board. According to Cleveland Clinic's *Top 10 Innovations of 2018*, 90% of healthcare executives have or are currently developing telehealth programs. Telehealth is predicted to have 7 million patient users in 2018, a 19-fold increase since 2013.

U.S. Health Care Expenditures: Spending per Capita & Percent of GDP



Source: CMS

Government Affairs Action

Properties connected to the HC and S+T industries are part of the larger commercial real estate and 'vertical' markets that ACEC monitors and advocates for as part of its government affairs mission. Issues and recent actions affecting this market include the following:

- **Private Activity Bonds:** ACEC is working with stakeholders to advance the Public Buildings Renewal Act (H.R. 960/S. 326) legislation to create \$5 billion in private activity bonds to support the design and construction of hospitals, schools, courthouses, libraries, city halls, law enforcement facilities, universities and other public and institutional buildings.
- **Section 179D Tax Deduction:** ACEC is advocating for a multi-year extension of the Section 179D energy-efficient commercial buildings tax deduction, which expired in December 2017. Section 179D allowed private building owners to claim a \$1.80 per-square-foot deduction for the installation of certain energy-efficient systems and allowed public building owners to allocate the deduction to the designer.
- **Superfund & Brownfields Redevelopment:** ACEC supports funding for the Superfund program and brownfields redevelopment to restore valuable properties to productive commercial use. ACEC released a white paper in 2017 to build the case for more investment in the Superfund program. The paper was featured in Congressional hearings and helped boost funding during the appropriations process. The Council also supported the Build Act in 2017 to reauthorize federal brownfields programs, provide local governments with increased liability protection to facilitate redevelopment (for private and public investment), and authorize more funding for site cleanups.
- **National Flood Insurance Program:** ACEC supports the National Flood Insurance Program (NFIP), which offers critical coverage for property owners. The Council is working with the commercial real estate industry to support the long-term reauthorization and reform of the NFIP, as well as an expansion of private-market protections.

Due to changing regulatory and reimbursement landscapes and the dialogue around repealing, replacing or modifying the Affordable Care Act, continued turbulence and uncertainty is expected in the health care industry.

Business Development Insight

Track the firms and institutions investing in research and development

To better understand which HC institutions and biopharma firms may need upgraded or expanded laboratory, medical and administrative spaces, tracking which universities and hospitals are getting grant funding and what firms are investing in research and development (R&D) provides insight.

The first table below shows the top 10 health organizations who received National Institutes of Health (NIH) funding in 2017. The second table lists the top 10 biopharma companies that invested in R&D, which is not the 10 largest by sales or revenue. Institutions and companies investing in their futures are also investing in their facilities.

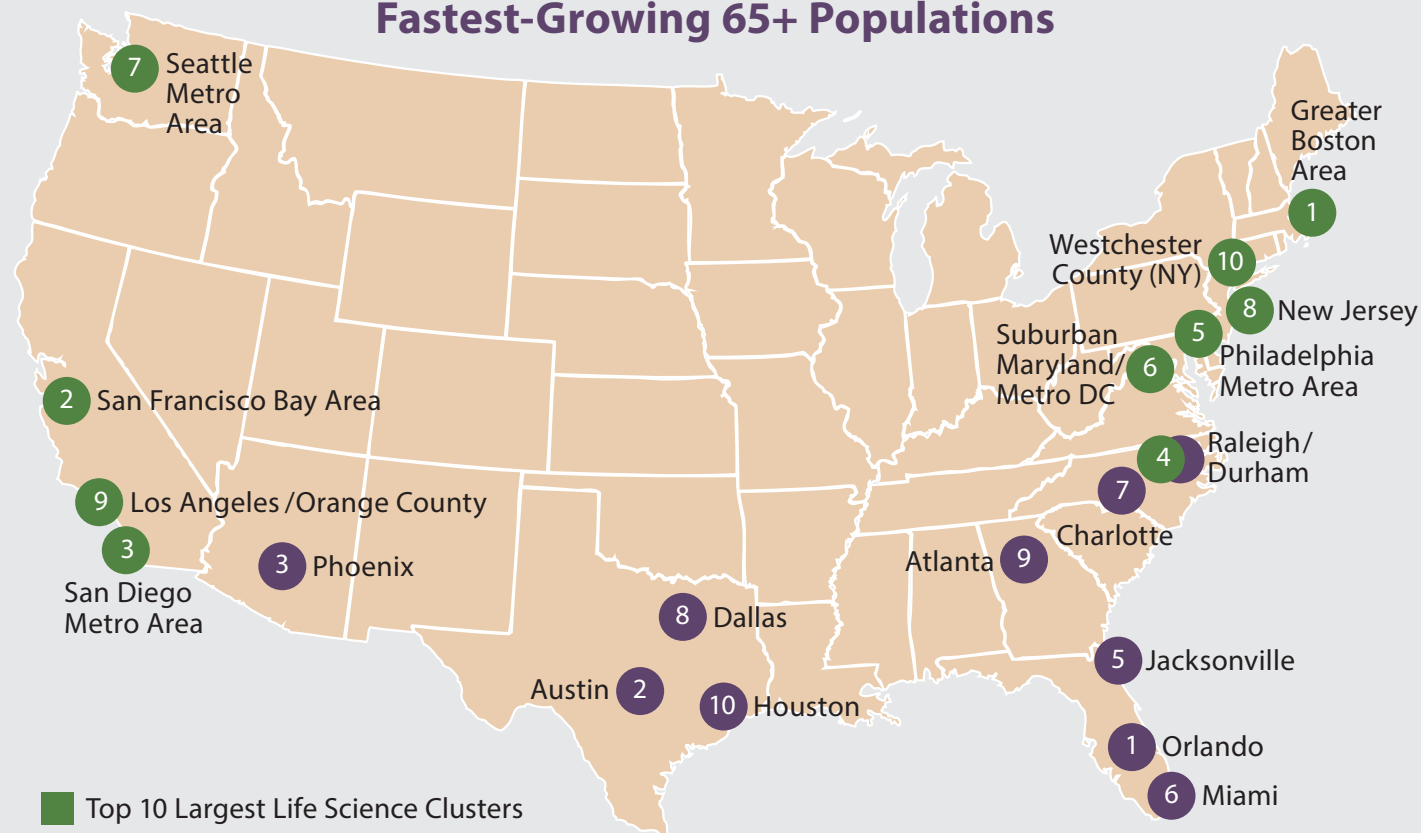
Rank	Health Organization	2017 NIH Funding
1	Johns Hopkins University (MD)	\$651.8 M
2	University of California, San Francisco	\$593.9 M
3	University of Michigan, Ann Arbor	\$521.8 M
4	University of Pennsylvania	\$493.9 M
5	University of Pittsburgh	\$485.3 M
6	Stanford University (CA)	\$465.9 M
7	University of Washington, Seattle	\$443.4 M
8	Duke University (NC)	\$440.3 M
9	Washington University (MO)	\$435.6 M
10	Yale University (CT)	\$425.2 M

Source: Becker's Hospital Review

Rank	Biopharma Company (Headquarters)	2017 R&D Spend
1	Roche (Basel, Switzerland)	\$9.181 B
2	Johnson & Johnson (New Brunswick, NJ)	\$8.360 B
3	Novartis (Basel, Switzerland)	\$7.823 B
4	Pfizer (New York, NY)	\$7.627 B
5	Merck & Co. (Kenilworth, NJ)	\$7.563 B
6	Sanofi (Paris, France)	\$6.184 B
7	AstraZeneca (London, England)	\$5.412 B
8	GlaxoSmithKline (Brentford, England)	\$4.978 B
9	Eli Lilly (Indianapolis, IN)	\$4.973 B
10	AbbVie (North Chicago, IL)	\$4.829 B

Source: Pharmaceutical Executive Magazine, Evaluate Ltd.

Top 10 Life Science Clusters & Cities with Fastest-Growing 65+ Populations



Source: JLL, U.S. Census Bureau

What's a Life Science 'Cluster'?

A life science cluster is an area or metropolitan region with a high density of life sciences employment. These areas are unique for having supportive R&D ecosystems of talented and educated professionals, who are often employed not only by private companies, but by leading academic research centers that are awarded substantial NIH funding. Life science clusters are often located in regions also known for being high-tech employment centers.

Between 2016 and 2025, the 65+ population is expected to rise by approximately 32 percent in the U.S. as a whole; in Orlando, the already large 65+ population is projected to increase by 67 percent.

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