VIEWPOINT

Academic Medical Centers
Too Large for Their Own Health?

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Author Audio Interview

Among the 141 fully accredited medical schools in the United States, only a few focus entirely on educating students, whereas most medical schools operate clinics and own hospitals, forming academic medical centers (AMCs). With recent consolidation of physician practices and hospitals, some AMCs have grown into multibillion-dollar systems. Among AMCs owned by medical schools, 56% have annual revenues greater than $500 million supported by very large clinical, educational, and research enterprises.[1] Have some AMCs grown too large to survive a changing health care system, much less to lead the change required?

Beyond their critical function in training physicians, AMCs have a disproportionate role in providing complex and uncompensated care. In addition, many of the discoveries that have led to health improvements can be traced to research performed at AMCs. These centers have produced tremendous benefits to society, both economically and in health improvements, and have been rewarded with steady growth, with the average US medical school generating $930 million in annual revenue in 2017, an increase from $139 million in 1977 after adjustment for inflation (**Figure**); however, revenue ranges widely among medical schools from $9.3 million to $11.3 billion.[1] These numbers underestimate the revenues of AMCs because revenue from hospitals that are affiliated but not owned by a medical school are not included. Collectively, AMCs generate an estimated 6.3 million jobs and contribute an estimated $562 billion to gross domestic product.[2]

At the same time, academic medicine has contributed to the creation of a suboptimal health system. The World Health Organization ranks the US health care system 37th among countries worldwide, just above Cuba,[3] and life expectancy has declined in the United States during the last 3 years. Health care costs in the United States are 25% greater than the second most expensive country and 14-fold greater than Cuba's.[4] Academic medical centers are major sources of health care in nearly every US metropolitan area, and costs of care at virtually all AMCs are particularly high, so there is no denying that they have contributed to the health care system that currently exists. The shifting balance of the 3 major missions of AMCs—education, research, and clinical care—underlies the current challenge.

Medical schools began with a singular focus on education to train new physicians. During the early 20th century, the median annual revenue for schools was less than $10 000 (about $250 000 when inflated to 2017 dollars), with the vast majority derived from tuition.[5] Clinical activities generally did not produce revenue, and research was typically unfunded. Schools had difficulty balancing the budget with tuition and fees alone, and parent organizations and state governments began subsidizing them.

Research was a growing focus of medical schools through the late 1900s. Funding from the National Institutes of Health (NIH), the primary funder of medical research at the time, increased from $464 000 in 1938 to $39.2 billion in 2018, of which $14.3 billion flowed to medical schools and their associated hospitals.[6] However, the proportion of medical school funding derived from research has declined more recently, with federal grants making up an average of 14% of medical schools' annual revenues (Figure), with industry and foundation funding accounting for another 9%.[1] From this perspective, funded research is actually a modest function of medical schools and their associated AMCs. Clinical revenue clearly is the dominating source of revenue at virtually every AMC.

The Flexner report[5] encouraged medical schools to oversee not just the basic science portion of the curriculum, but also the clinical training. Although Flexner recommended in 1910 that core faculty limit themselves to providing care without charge, by the 1950s, schools began collecting revenue for the clinical activities their faculty performed. As greater and greater margins were realized from these faculty clinicians with revenue exceeding costs, more were hired and clinics and hospitals were constructed to support them. These trends have accelerated during the last 20 years, with many faculty devoted nearly entirely to clinical care. Average clinical revenues for medical schools have increased to $573 million as of 2017 and account for 62% of total revenue.[1]

Thus, many of today's AMCs are similar to huge tankers loaded with health care services, and research and education are merely passengers. The growth of the clinical enterprise has allowed academic medicine to maintain its research and education missions in the face of relatively stagnant funding for research from the NIH, and limited core support from state and federal governments, particularly when inflation is considered. In fact, the margins on clinical revenues are often used to cover deficits in budgets for research and education and from providing subsidized care. There is the crux of the issue: any changes threatening the margins from clinical care will affect the entire mission of an AMC. The AMC missions are not self-funded; the margins on clinical care are required at most AMCs as is philanthropy.

Clinical activities at AMCs are predominated by tertiary care and by fee-for-service medicine. In 1998, the average cost of care at teaching hospitals was estimated to be 44% greater than at community hospitals[7] and elevated costs have persisted.[8] Academic medical centers tend to do well in negotiating reimbursement

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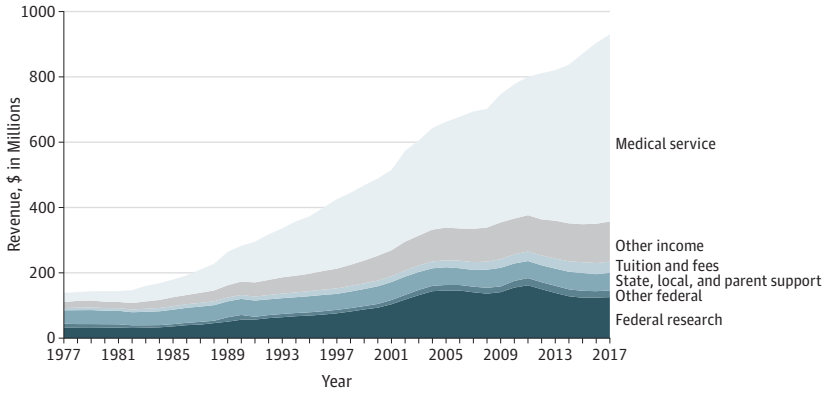
Figure. Average Annual Revenue by Source for Accredited US Medical Schools



Based on survey data from the Association of American Medical Colleges[1] adjusted to 2017 dollars using the consumer price index from the US Bureau of Labor Statistics.

rates from insurers, and they tend to admit patients who require more expensive and invasive interventions. Academic medical centers are optimized to deliver financial results in the prevailing fee-for-service system.

Thus, by necessity, the majority of AMCs are inclined to stay the course of the current health care system. A move to value-based care is more than just risky; it is counter to their best interests unless a clear line of sight to new payment models exists. In the fee-for-service payment system, preventing illness and reducing wasteful diagnostics or unnecessary treatments could reduce the income of AMCs (as well as other medical centers). Although many reports that have described the need to reallocate resources toward prevention, population health, and value-based care come from medical school faculty, the leaders of the AMC clinical enterprise will tend to resist change because it puts the entire institution at risk. Faculty can discuss population health and value, but may be stymied from making important progress. In this way, academic medicine is not fully aligned with society's interest in optimizing health outcomes or in reducing waste.

Shifting to more closely realign the incentives of AMCs with society will not be easy. The clinical enterprises have become analogous to gigantic tankers, creating momentum to continue on the current course. Lobbying for additional funding from the NIH or for more governmental support has not made research and education self-sustaining missions, and downsizing these activities could ultimately result in a slowing of health innovations and a shortage of physicians. It is also why support for "Medicare for All" is not likely to come from the leadership of AMCs unless it were accompanied by a substantial change in how hospitals would be reimbursed because hospital revenues could decline substantially if reimbursement for hospitals were similar to current Medicare rates.[9]

To better align with society's interests, AMCs must reduce their reliance on fee-for-service medicine and the associated pressures to retain market share, raise prices, and increase consumption of health care. Instead, they should leverage their expert leaders to develop and coordinate new models of care, focusing on solutions that enhance value. If this can be done in partnership with community physicians, scaling of new, successful models can be realized more rapidly. If payers are reimbursing for value, the planning and coordination role naturally played by AMCs could produce revenues that exceed costs. Academic medicine could then lead in innovation and coordination of new models of care, being paid for value without necessarily owning all components of the system.

Academic medical centers should be optimized to enable rapid innovation in health that aligns with society's interests. Getting this alignment right will not be easy, particularly in an industry that has rewarded the traditional fee-for-service model with fairly reliable margins. However, innovation is extremely valuable to society, and innovators can reap financial rewards that far exceed investments, while current margins for clinical activities are typically quite small. Similar to a nimble schooner, an AMC that can alter course quickly and test new waters may be more valuable to society than a megatanker, particularly given the narrow straits ahead.

ARTICLE INFORMATION

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