



Clinical Margin Fatigue

Rethinking how AMCs Support the Research Mission

The Academic Tricycle

Academic medical centers (AMCs) represent fewer than 5% of the total hospitals nationwide, but they serve as the bedrock of the US health system. They represent more than 70% of the nation’s level 1 trauma capacity, account for more than 15% of all hospital admissions, and provide more than 40% of the country’s charity care. The AAMC estimates that AMCs have created 3 million full-time jobs, and generate over half a trillion dollars in annual economic impact.

But what makes AMCs unique is not their contribution to clinical care delivery – though it is definitely significant. The key differentiator for AMCs is their commitment to the other two components of the tripartite mission – research and teaching. For decades, AMCs were viewed as having a mission that resembled a “three-legged stool” – with clinical care, education and research all given equal importance.

Revenue Source	FY2015 All Revenue	FY2016 All Revenue	Change in \$	% Change
Practice Plans*	\$47,300	\$51,257	\$3,957	8.4
Hospital Purchased Services and Investments	\$20,413	\$22,632	\$2,219	10.9
Government and Parent Support	\$6,195	\$5,980	-\$215	-3.5
Tuition and Fees	\$4,296	\$4,548	\$252	5.9
Endowment†	\$2,038	\$2,143	\$105	5.1
Gifts‡	\$2,269	\$2,388	\$119	5.3
Miscellaneous Sources ‡	\$4,445	\$4,728	\$283	6.4
Total Grants and Contracts	\$26,011	\$26,981	\$970	3.7
Federal Research Grants and Contracts	\$16,078	\$16,588	\$510	3.2
Direct	\$11,544	\$11,840	\$297	2.6
Facilities and Administrative/Indirect	\$4,534	\$4,748	\$214	4.7
Other Grants and Contracts	\$9,933	\$10,393	\$459	4.6
Direct	\$8,685	\$8,980	\$295	3.4
Facilities and Administrative/Indirect	\$1,248	\$1,413	\$164	13.2
Total Revenues	\$112,968	\$120,657	\$7,689	6.8

*Includes Practice Plan, Network Affiliation, and Other Medical Service Organization Funds. Practice Plan revenues from affiliated hospitals are reported with Hospital Purchased Services & Support: \$7,539 million total revenue (FY16) and \$6,696 million total revenue (FY15).

†Includes Restricted and Unrestricted Funds.

‡Includes Sales and Services, Royalties, Consulting, Interest Income, Gains (Losses) on Investments, Leases/Rentals, and Other Miscellaneous Revenues

Totals may not sum due to rounding.

There were 136 fully-accredited medical schools in FY2016 and 134 fully-accredited medical schools in FY2015.

Figure 1: Percent Change in Medical School Revenues: 2015 vs. 2016 (Source: AAMC)

But as funding sources have evolved, most academic medical centers now resemble a “tricycle”, with clinical care functioning as the big wheel pulling the other two along. Clinical revenues (represented in the graphic above by the practice plan and hospital purchased services rows) now exceed 60% of all medical school sources of funding and are growing 2.5x faster than all other revenue sources. Medical schools are increasingly relying on clinical margin to support investments in research and education. What happens to the tripartite mission if the clinical margin “well” starts to run dry?



“No Margin, No Mission”

While most AMCs today generate a 3 to 5% operating margin, this is almost entirely being driven by the clinical mission. The research and teaching missions for most AMCs are typically breakeven or require subsidization. The AMC playbook for funding the academic mission was based on three key principles:

- **Higher Commercial Rates:** AMCs tend to have significant brand recognition in their markets – and in a fee-for-service environment most were able to extract a premium in rate negotiations with commercial payors
- **Tertiary/Quaternary Services:** As the tertiary/quaternary providers in their respective markets, AMCs typically have a much higher patient complexity mix than their community hospital competitors – mitigating some of the margin erosion associated with the ongoing shift to outpatient and more commodity-like healthcare services
- **Scale:** AMCs have been at the forefront of provider consolidation over the past decade – acquiring smaller regional hospitals and employing large cadres of primary care and specialist physicians. This expansion of the revenue base has allowed for continued investment in the academic mission

Over the past two decades, the growth in the typical AMC clinical revenue base grew fast enough to allow for significant investments in research and teaching. But our clients are now making it clear that all three of these principles are under increasing pressure, which will force AMCs to make increasingly tough decisions on how best to allocate the remaining margin across all three missions.

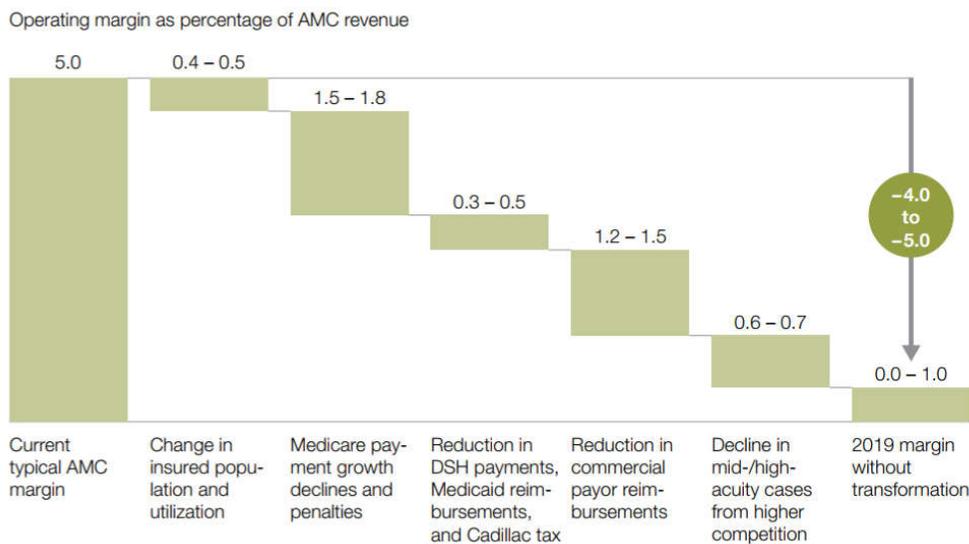


Figure 2: Projected Clinical Operating Margin as a % of AMC Revenue (Source: McKinsey)

Almost every AMC in the country is currently implementing a variety of M&A and cost containment strategies to expand the clinical revenue base while simultaneously improving profitability. AMCs are also trying to develop new sources of funding –



through avenues ranging from increased philanthropy to the development of commercialization arms focused on monetizing intellectual property.

But Whitecap believes both of these solutions will simply kick the can down the road on a more fundamental question – can AMCs afford continued investment in the research and teaching missions, or will they reconfigure their approach?

“Can’t Be All Things to All People”

AMCs are philosophically opposed to having gaps in their complement of services. They function as clinical care safety nets, biomedical research engines and developers of healthcare professionals. Cutting a service or program isn’t in their DNA.

Accreditation services (e.g., LCME, ACGME, AOA) largely dictate the requirements associated with physician education, so while we agree that there needs to be a national effort to better align future investments in physician training with anticipated physician need, that is a broader policy issue that we won’t delve into here.

But while there are mixed opinions on whether increased research investment can be directly correlated to the prestige and reputation of an AMC, there is no argument about the financial implications in the current paradigm. Nationally it is estimated that the average AMC recoups less than 80 cents of direct and indirect grant funding for every dollar of research expenditure. As the pool of researchers competing for grants continues to grow faster than the available grant dollar pool, AMCs will have to spend ever-increasing amounts to lure established researchers from other institutions in a “zero-sum game”.

This dynamic is not sustainable. And while every AMC dreams of nurturing a researcher responsible for a groundbreaking scientific advance that results in a commercialization bonanza, the reality is that this remains the equivalent of purchasing a lottery ticket for most AMCs. Given that, below are some of our thoughts on how the academic research paradigm may evolve over the next decade.

1. AMCs will adopt more stringent guidelines for research mission subsidization

In the immediate term, AMCs will try and reduce their level of subsidy associated with their current research platforms. While AMCs have been measuring wRVU production for their clinical faculty for more than a decade, similar expectations are only just being placed on research productivity. Whitecap analysis of grant dollar generation by research faculty at a host of AMCs across the country shows huge variability in average annual grant funding per Principal Investigator (PI) across all departments – with some AMCs averaging under \$250,000 per PI while others are well over \$1,000,000.

This might be explained if the variability was highly correlated to the mix of wet-to-dry and senior-to-junior faculty profile within each AMC. But as shown in the illustrative graphic below, most AMCs have a substantial number of PIs earning far less in annual research grant generation than they do in compensation.



Figure 3: Illustrative Grant-to-Compensation Profile for a Representative AMC (Source: Whitecap)

This essentially amounts to internal subsidization of the research mission, with highly productive researchers at the far right of the graphic generating funds used to subsidize those on the far left. Unfortunately, as AMCs become more proactive at determining whether a researcher deserves continued subsidy, the unintended consequence might be that there will be less interest by junior researchers in selecting uncharted areas of inquiry for fear that funding won't materialize.

2. AMCs will focus their research missions on areas where there is clinical scale

At many AMCs, the research portfolio evolves completely uninformed by the clinical portfolio and vice-versa. The term “bench to bedside” is aspirational for an AMC – and yet in many cases, clinical trials go unfilled because there is an insufficient patient population that might benefit from the research. In the next 3 to 5 years, we expect AMCs to make more deliberate decisions regarding the composition of their research portfolios – only investing in areas of discovery where there is a clinical base of patients that support the “bench to bedside” ideal.

This is not without controversy. Every Chair that has ever been recruited to run a department in a medical school ultimately wants to expand their research. In most cases, research prowess is the reason the individual was recruited as Chair in the first place – and it is this dynamic that has led to “peanut butter” investment in research across every department. But this neither supports excellence, nor helps generate a halo for the AMCs marquee clinical programs.

3. The research “arms race” will start to slow down as AMCs partner to create research “hub-and-spoke” models

The growth in the NIH budget through the early 2000s resulted in an unsustainable investment by AMCs in basic and clinical research infrastructure. Now we have too much research capacity competing for the same pool of funding. We are already starting to see many AMCs make strategic decisions to focus on growth in clinical and population-based research, while reducing their level of investment in basic research. This is in part due to the fact that “wet lab” research space and associated cores are



expensive to build, operate and upgrade on a regular basis, and in many cases are highly specific to a specific investigator's research. If that investigator leaves for other opportunities, the investment lies fallow.

In the next five years, we expect to see a significant increase in the number of "research collaboratives" – which will effectively create "hub and spoke" models for specific areas of inquiry. The basic science will be conducted at fewer "hub" partner institutions, but clinical and population-based research in that area will occur at all of the "spokes". Research labs across multiple AMCs already partner on projects and papers – this will simply extend that concept to entire institutions.

4. Independent research institutions will start to rebound

Over the past decade, the share of NIH funding that goes to independent research institutes has declined to less than 10% as AMCs have aggressively courted researchers with the promise of state-of-the-art infrastructure and higher salaries. Many independent research institutions closed their doors or sought out partnerships with the very AMCs that were raiding their talent.

But for reasons detailed earlier, we believe AMCs will start to trim their research missions. Unless there is another expansionary NIH environment similar to the early 2000s, this will result in career researchers in the basic sciences – especially those with solid but unspectacular portfolios – having to find alternative employers. The most likely occurrence is a transition back to independent research institutions at lower salaries, which in turn will allow the independent research institutions to once again support their research-only missions in a financially sustainable manner.

The AMC research complex is about to undergo some much-needed pruning.