



THE BLUE RIDGE ACADEMIC HEALTH GROUP

*Financially Sustaining the
Academic Enterprise*

SPRING 2022 | Report 25

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(June 2021 virtual meeting)

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Mission: *The Blue Ridge Academic Health Group seeks to take a societal view of health and health care needs and to identify recommendations for academic health centers (AHCs) to help create greater value for society. The Blue Ridge Group also recommends public policies to enable AHCs to accomplish these ends.*

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Introduction: The Economics of the Academic Health Center (AHC)

Overview of Academic Health Center Funding Model

Academic Health Centers (AHCs) are the backbone of health and health care innovation in the United States (US), in addition to their fundamental mission of educating the next generation of clinicians and researchers. Many of the critical advances in medicine have originated in AHCs, including discoveries that led to mRNA vaccines, radiation therapy, statins, human organ transplant surgery, drugs to treat HIV/AIDS, and cardiac defibrillators. These monumental innovations and discoveries require substantial and sustained research and innovation, core differentiating components of AHCs that embody the passion and mission of academic institutions.

However, the AHC research enterprise always requires financial support from other sources, even when faculty investigators receive funding from the National Institutes of Health (NIH), private funding from corporations, and philanthropy. This funding gap necessitates investment of clinical margin into the academic enterprise to cover the financial shortfall, and today that support is estimated at more than \$20 billion annually. Adding education further escalates the amount. To produce this margin—and to have enough left over to reinvest in the clinical enter-

prise itself—the AHC clinical enterprise must yield exceptional financial productivity, since government reimbursement (Medicare, Medicaid) usually falls short of cost. Fortunately, investing clinical margin in the academic enterprise yields returns for both:

- By supporting primary research activities, growth in external grant and contract funding as well as downstream philanthropy and technology transfer are catalyzed.
- Investments in research improve the stature and visibility of AHCs as the providers of the most advanced and innovative health care, which attracts clinicians of national stature and helps grow physician referrals. Investments in human subjects research programs (clinical trials) also help attract patients to AHCs.
- Increased patient volume drives growth in clinical revenue, which can then be reinvested into research and/or education.
- This harmonious cycle—referred to as the “virtuous circle” of academic medicine (Figure 1)—results in AHCs in most communities being viewed as the preferred provider for complex care, the locus of innovation and “bleeding edge” medicine for the world, and the classroom for the next generation of physicians, scientists, and other health professionals.

Threats to the Virtuous Circle

In recent years, the virtuous circle has been fueled by significant clinical enterprise growth, which has enabled continued investment despite flat or declining per capita reimbursement from government and private payors relative to inflation. However, AHC investment of clinical surpluses to support academic activities is under stress as the nation, including both payors and patients, seek to limit the growth of health care spending. Several challenges and headwinds are putting that funding under increased pressure, threatening the virtuous circle's foundation and the overall financial sustainability of AHCs. The challenges and headwinds include:

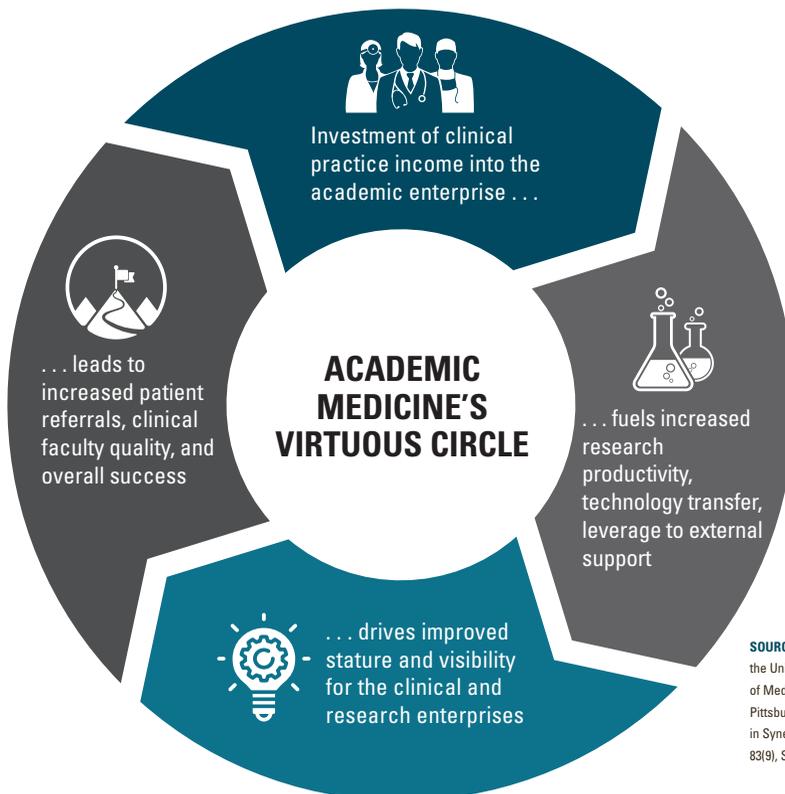
1. Increased costs from labor workforce shortages: All health systems are under tremendous cost pressure as clinical and administrative staff shortages, driven partly by the COVID-19 pandemic, have reduced clinical capacity and increased labor costs through

wage increases and more widespread use of premium-pay temporary labor. The Bureau of Labor Statistics reported in November 2021 that hospitals' labor costs increased 8 percent per patient day since 2017.¹

2. Payor mix shift: As the population ages, large numbers of patients with private insurance convert to Medicare—currently about 3,500 net enrollees every day.² This results in an overall payor mix shift across the health care industry. Government reimbursement rates are typically well below the cost of care and are often less than half what private insurers pay providers. In addition, annual increases are well below inflation, making it increasingly difficult to cover increasing operating costs and make needed investments in equipment and facilities.

3. Lower commercial rate increases: Providers are seeing lower contracted rate increases as

FIGURE 1 | *Academic Medicine's Virtuous Circle*



SOURCE: "The Relationship between the University of Pittsburgh School of Medicine and the University of Pittsburgh Medical Center: A Profile in Synergy," *Academic Medicine* 83(9), September 2008.

commercial payors attempt to deliver more affordable health care coverage to employers and employees. In addition, some insurers are directing patients away from AHCs toward lower cost community sites of care for outpatient services in an effort to reduce health care costs.

4. **Disproportionate share of uninsured and underinsured patients:** AHCs provide a disproportionate amount of care for the nation's uninsured and underinsured. As such, they are particularly vulnerable to reductions in programs designed to support disproportionate share providers, such as proposed cuts and downscaling efforts to the 340b program in recent years as well as noncompliance with this program by six pharmaceutical manufacturers in 2021.³
5. **Lack of other consistent and reliable funding:** Other funding sources can be unpredictable. For example, philanthropy can fluctuate significantly from year to year and technology transfer revenues are highly variable and have a finite timespan.

The challenges related to COVID-19 over the past two years have further exposed the vulnerability of the current academic funding model and exacerbated the headwinds described above. AHCs provided a critical backstop in many communities for COVID-19 care when beds and provider supply were limited, and despite CARES Act funding, AHCs have experienced sustained lower operating margins than not-for-profit and for-profit systems, per a recent Moody's Investor Services report.⁴ In addition, provider mental health and wellness—already strained pre-pandemic, as described in a previous Blue Ridge Academic Health Group (BRAHG) report⁵—was further degraded through the pandemic and is contributing to workforce shortages and increased costs. Finally, the drop in state revenue collections due to the economic slowdown from COVID-19 has stretched state budgets. Fifteen states have reduced their health care budgets in the last two years,⁶ which negatively impacts Medicaid fund-

ing and/or limits other state-sponsored grants once recent federal relief funds taper off.

Increasing Academic Funding Needs

Research enterprise trends necessitate increased investment relative to years past despite pressure on clinical margins, reducing the available funds. The research funding shortfall at AHCs typically ranges from 25 to 50 percent of the institution's total extramural research funding, and the gap is widening. This shortfall is driven by indirect cost recovery rates that do not consistently cover the actual cost of space and research administration, support junior investigator requirements before they can successfully compete for grant support, and NIH salary caps that continue to fall further below actual salary costs, exacerbated in part by the increasing cost of attracting top-tier research faculty. As a result, increased investment is needed just to maintain current levels of research at most AHCs. Ever higher levels of investment are required to grow the research enterprise, as there is no evidence that economies of scale can be achieved as the research enterprise expands. Most AHCs aspire to grow their research enterprise, particularly at a time when NIH funding has begun increasing after more than a decade of flat funding, which represented a decline in real dollars.

Medical education also requires increasing investment. There are a growing number of internally funded graduate medical education (GME) positions due to antiquated caps—in 2018, 70 percent of hospitals were over the direct and/or indirect cap on Medicare-funded residents. The gap is increasing despite growth in medical student class size and in the number of medical schools in an effort to help expand physician supply.⁷ Undergraduate medical education (UME) curriculum changes are deemphasizing the relatively efficient lecture model and shifting more of the educational experience toward team-based learning models—a more costly approach to education. Tuition rarely covers the full cost of UME, causing some medical schools to increase class size in an attempt to create economies of scale. There is also an increasing expectation for reduced or no tuition to compete for top students

and to make medical education more affordable across socioeconomic groups to increase diversity, further adding to rising medical education costs for AHCs.

The Challenge Facing AHCs

The hurdles highlighted above require AHC leaders to consider new and evolving strategies to maintain and grow the academic enterprise. Rather than explore the full range of potential answers to this complex and layered question, this report explores three targeted areas that may well have a disproportionate impact:

- How are AHCs using funds flow models and economic incentives to help improve financial performance to reduce the research funding shortfall and to increase the funds available to support the research enterprise? Are these approaches effective? What are the key success factors?
- Department chair packages often require significant investment, particularly in the largest departments. Are sizeable chair packages required and sustainable? What other funding and investment approaches should be considered? How often are chair term limits or other techniques used, and how do they impact funding needs and approaches?
- Is substantial expansion of clinical enterprise scale effective (or required) to secure the clinical margins required to help support the academic enterprise? If so, what strategies are viable and what are the risks and benefits?

DISCUSSION AND COMMENTARY

Supporting the Sustainability of the Virtuous Circle: Re-examining Funds Flow Models

As highlighted earlier, substantial investment of clinical margin is required to support every AHC's academic enterprise. In many AHCs, this investment occurs via a complex and opaque web of funds that flow across the health system, faculty practice plan, and school of medicine. For example, the health system may offer the school of medicine an academic investment fund transfer to support academic activities, and the school may then distribute it among departments to support the research efforts of individual faculty members.

Thousands of similar funding line items often exist in an AHC which can create a funding web so layered and transparent that the amounts, purpose, or time period of funding transfers may not be fully clear to the recipients and/or sender. In addition, as AHCs have grown by adding community physicians, hospitals, and other care delivery sites, the degree of financial support provided may also vary across these operating units, with the core teaching hospital typically providing the most financial support. These variable levels of support sometimes impede efforts to operate as an integrated delivery system attempting to optimize overall enterprise performance.

It is not uncommon for the details of funds flow models to be opaque to senior leaders at an AHC, as models are often complex, vary by department, and can include numerous exceptions and "side deals" cobbled together over many years. However, it is imperative that AHC leaders, including all department chairs, have a solid understanding of the funds flow model in place to understand what level of support is affordable and to ensure these resources are being used appropriately and effectively so that the model can be altered and improved where needed. This approach requires transparency between the clinical and academic enterprises, as well as clear income and cost allocation methodologies within the medical school.

Effective funds flow models align incentives and employ them as powerful motivators to help improve performance. An approach at certain BRAHG institutions modifies the expectations for clinical departments and chairs by establishing pay-for-performance metrics and faculty compensation incentives on factors the department can more directly impact: clinical productivity and faculty performance on measures of quality, patient service, and patient access rather than on individual department clinical margins. Clinical divisions and departments receive their annual clinical incentive based on their scores on this balanced report card. This approach removes previous distortions that may have allowed for underperformance, such as lucrative payor contracts for select services, which made some departments look profitable despite faculty members being

below median productivity benchmarks. Under the new model, clinical departments and their divisions closely manage their faculty to perform well on key metrics, not only for financial reasons but also for reasons of reputation, as scores are regularly published for all leaders to see. Measuring the performance of each division and department using the same balanced scorecard allows the AHC to align behavior, ensure consistency, and maximize impact. This model also reduces the need for each clinical department to negotiate for financial support from the health system to reach breakeven or better financial performance. However, the movement to focus chairs, faculty, and other leaders on overall clinical enterprise profitability, rather than departments as the primary profit center, represents a significant cultural change, especially for those departments that remained profitable without significant financial support.

One lesson learned is for the funds flow incentive to be more directly tied to individual actions to spur meaningful behavior change across all layers within the organization. While macro-level incentives (e.g., AHCs that share a portion of health system net operating margin with the medical school) can help motivate and provide central funding for the academic enterprise, they may be less likely to motivate department chairs and faculty to function differently. One AHC at the BRAHG meeting described its clinical margin-sharing methodology, whereby a portion of the clinical margin is distributed based on health system profits and the amount of profit shares individual departments previously purchased. Some department chairs have recognized the health system can still generate a healthy clinical margin and distribute a satisfying profit share, even if their individual department is not as productive or contributing to overall health system margin improvement. The profit share in this instance may enable some departments to be complacent about optimizing clinical productivity. Most AHCs are evolving away from an operating model in which each medical school clinical department functions with complete autonomy to one with a greater focus on both departmental and collective performance. As AHCs transition to more team-

based funds flow models, it is important to ensure incentives are aligned across various leadership levels, from division leaders, to department chairs, to school of medicine, practice plan and health system leaders.

Another key characteristic of effective funds flow models is appropriate sizing of the research enterprise investment relative to what the AHC can afford from clinical margins based on scale and profitability. One AHC described its formulaic approach to defining how much they can afford to invest in financial support for their research enterprise. The AHC sets the annual growth of its research investment with clinical dollars to the same percentage growth rate as its clinical operating margin. To minimize year-to-year variation due to large changes in clinical enterprise profitability, the institution sets a ceiling for annual research enterprise investment growth of 10 percent and a floor at the federal research cost inflation benchmark (BRDPI). All research budget funding increase requests must fit within the resulting growth rate. This approach allows for more predictable research investment and also more directly ties research funding growth to clinical enterprise growth and margins, further incentivizing department chairs and research leaders to strive for high performance of clinical faculty and the overall clinical enterprise.

While there are many more characteristics of highly effective funds flow models to discuss, the few highlighted above show the importance of data transparency and use of incentives at appropriate levels to drive individual and team behavior as well as the criticality of sizing the research enterprise relative to clinical profitability.

Recognizing the Importance of Faculty Recruitment and Ensuring a Sustainable Model for the Future

The importance of having chairs who can build and lead successful departments cannot be overstated. Strong department chairs attract other talented faculty researchers and clinicians, draw external research funding, and elevate the AHC's brand and reputation through the chairs' and their departments' research contributions and clinical capabilities. This in turn helps grow patient

referrals and corresponding clinical revenue and helps attract the best and brightest residents and fellows, further bolstering an AHC's clinical and research enterprises.

Department chair recruitment packages (also known as "chair packages") are costly and increasingly difficult to afford at many medical schools and AHCs wrestling with financial headwinds. However, the cost of these packages is unlikely to budge, and it is highly unlikely that the practice of granting chair packages will decline in the near future. Candidates know their success is highly dependent on resources secured before they accept an offer (and therefore they are willing to negotiate strongly), and AHCs must compete to secure the best talent.

However, some practices around chair packages are changing to alleviate or spread the financial burden over time and to ensure these funds are spent appropriately. Many AHCs have developed multiyear financial forecasts, which include expected expenditures on current academic enterprise commitments and, more important, forecasts of the expected costs for future department chair recruits. Increasingly, these projections dictate the maximum expenditure or guardrail regarding the funds available for each recruit. The projected cost of chair packages is based on a review of the future needs in departments where recruitment is expected and the estimated costs of addressing those needs. This approach demonstrates an increasing intention by select AHCs to first consider what the enterprise needs from a department, then the appropriate chair package funding required to meet those strategic objectives. After determining what funding is needed, the AHC may search for a chair candidate who fits within (while helping adjust) that vision, rather than allow a chair candidate to have free reign to set a vision and dictate the funding needed.

Once a package is granted and the chair accepts the offer, at some institutions committed funds are managed centrally and distributed over time, based on research and academic activity projects and needs. Chairs must still provide an annual justification for their proposed investments before funds are made available within the limits of the previously agreed-upon package. This mod-

el assures oversight of spending, aligns institutional priorities with those of chairs and departments, and may spread the spending of committed funds over a longer time period, given the realistic challenges chairs often experience with new faculty recruiting (a five-year package is sometimes spent over seven to eight years or more).

While some AHCs now provide renewed packages after the initial package is fully spent to provide additional funding for departmental investments and reduce chair turnover, this practice can create additional expenditures and contribute to AHC and medical school economic challenges.

Some recruitments now include non-monetary chair package components, such as providing leadership training or support, often geared to help nontraditional candidates acclimate to and succeed in their new leadership roles. This approach can help expand the pool of candidates and increase diversity among chairs.

Pursuing Long-term Sustainability through Scale: Exploring the Opportunities, Risks, and Nuances in Growing a Larger Clinical Enterprise to Support the Overall AHC

Growing the scale of the clinical enterprise has the potential to support an AHC's long-term financial sustainability. In the Blue Ridge Academic Health Group's 2017 report, *The Academic Health Center: Delivery System Design in the Changing Health Care Ecosystem—Sizing the Clinical Enterprise to Support the Academic Mission*,⁸ we outlined the rationale for clinical scale growth through the lens of providing financial and other support for the academic mission, including:

- Maintaining sufficient patient volumes for education programs.
- Sustaining the scope and diversity of patients needed for educational and clinical research programs.
- Maintaining sufficient revenue and market presence in many cases to support the cross-subsidy or academic transfer funds required to fund academic programs.

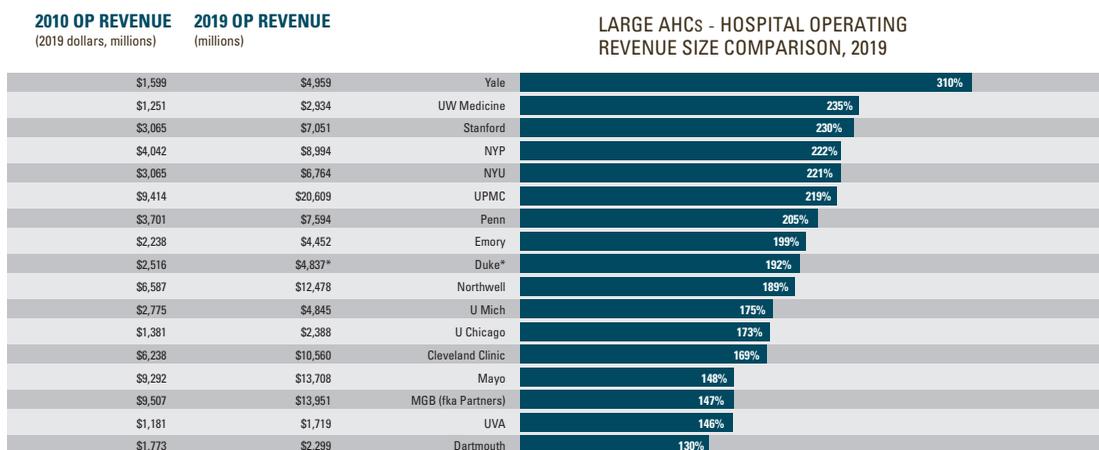
Because of academic needs and financial shortfalls, most AHCs spend 5–10 percent of clinical enterprise revenues to support the faculty, of which 1.5–2.5 percent of net revenues are for

explicit academic support. Many AHCs also provide additional funding to clinical departments, marginally increasing the overall percent of net patient revenue supporting the academic enterprise. AHC academic costs are growing and must continue to grow to meet and excel in education, training, and research demands and opportunities. As long as AHC clinical operating margins are maintained, strategic growth of the AHC clinical enterprise should result in growth in net revenue available for research and education with-

out increasing the overall percentage of revenues supporting the academic mission.

Many AHC clinical enterprises have been successful in growing their scale and revenues substantially over the past decade (see Figure 2). They have achieved their market-leading positions by differentiating their clinical capabilities, increasing clinical capacity by expansion of both their faculty and community provider workforce, and by aggressively managing clinical effort and productivity.

FIGURE 2 | *Large AHC Hospital Operating Revenue Growth*



SOURCES: Audited financial statements (AFS) or annual reports. *\$1 billion was added to Duke to accommodate the practice plan.

NOTES: End year is 2019 to avoid impacts of COVID-19 in 2020. All dollar values are shown in 2019 USD. Revenues for health systems fully integrated financially with their affiliated university are net patient services revenue and "other medical-related revenue" or "other medical services revenue" only. Any other revenue that might be reflected in other health systems' operating revenue that is included in other academic categories in the university AFS is not included.

- Many AHCs have grown their clinical enterprise scale through partnerships and acquisitions of community hospitals and physicians. This approach has extended the AHC's reach across the market, secured its strategic market position, and helped optimize the total cost of care by concentrating the highest acuity cases at the academic campus and shifting lower acuity care to community settings. Inpatient volume at many AHC-affiliated community hospitals has subsequently grown due to brand recognition (assuming the community hospital is rebranded or cobranded with the AHC's name) and because specialists can be more

easily recruited for the community hospitals. This growth expands the revenue base available to support the academic enterprise. For example, one medical school receives about 1.5 percent of net patient service revenue from its health system's affiliated community hospitals, thus supporting the academic mission and extending the AHC's brand across the network.

- Growth through acquisitions introduces several challenges that should be considered before proceeding with this approach. First, AHCs need to carefully assess the long-term viability of community assets for which they take finan-

cial responsibility and, in some cases, make financial commitments. Acquiring community assets can result in margin erosion, as some types of inpatient care are continuing to shift to ambulatory and home settings and provision of complex inpatient care is increasingly concentrating in major teaching hospitals. In addition, some of these relationships result in extensive new capital commitments, potentially threatening the total funds available to support the academic enterprise. Second, acquisitions may create challenges in ensuring a consistent patient experience and outcomes across the entire distributed delivery system. In such instances, this strategy can dilute the AHC's brand. Finally, the acquisition process requires substantial time and focus from AHC leadership, drawing focus away from other AHC needs.

As an alternative to acquiring community hospitals, some AHCs have used partnership approaches to further build their clinical enterprise without taking financial responsibility for the community asset. This strategy thus results in large affiliated networks without the financial risks of ownership. Several examples from members of BRAHG were discussed at the last annual meeting:

- **Network approach:** Vanderbilt University Medical Center created the Vanderbilt Health Affiliated Network, a clinically integrated network with more than 6,400 providers and 70 hospitals that uses data-driven insights and collaboration to provide high-quality, cost-effective care in the region.
- **Joint operating agreement (JOA) approach:** UT Southwestern created a joint operating agreement with Texas Health Resources, a large nonprofit community health system with 23 hospitals distributed throughout the Dallas-Fort Worth metroplex. The JOA allows UT Southwestern to have many of the benefits of scale without assuming the risk and capital commitment of developing a large delivery network on its own.
- **Joint venture (JV) approach:** Michigan Medicine took a minority stake in a joint venture with Trinity Health for St. Joseph Mercy

Chelsea Hospital. Trinity Health continues to operate the facility while Michigan Medicine extends its medical capabilities to the community site. The JV allows Michigan Medicine to extend its inpatient capacity while also receiving a share of the margin of the volume it serves at Chelsea Hospital.

To supplement growing the scale of the clinical enterprise, several other sources of growth are available, though all can vary significantly over time, making it difficult to rely on them as permanent or long-term funding strategies.

- **Philanthropy:** Some AHCs have been able to attract and use annual philanthropic support, endowment income, and grants to supplement other funding sources. In FY20, the average annual gift and endowment funding was nearly \$100 million for the 40 largest NIH-funded medical schools. While this can be a lucrative source of funding, it should be noted that, based on the way this information is collected, philanthropic dollars almost always include a substantial portion of grants from research-based foundations. These grants are primarily allocated to catalyzing early studies rather than offsetting ongoing research enterprise costs. In many cases, the studies they support actually increase an AHC's underfunded overhead cost of research. True offsets to research costs are most typically accomplished through private gifts from philanthropic donors. Philanthropy dollars, including the size and number of gifts as well as the yield on endowment income from prior gifts, can vary depending on the state of the economy and stock market performance.
- **Technology transfers:** Some medical schools have licensed or sold their discoveries through "commercialization" or "tech transfer" programs, providing a meaningful revenue stream over limited periods of time. In 2018, just under \$3 billion in licensing revenue was generated from academic innovations including medical inventions.⁹ However, these revenues do not replace the vast majority of academic enterprise costs. Moreover, high dependence on this revenue source is risky, as it can vary significantly over time, particularly as patents

near their end. In addition, most universities have policies that assign a significant portion of the revenue stream to the investigators personally, as well as their labs, leaving the parent organizations (e.g., the AHC and/or university) 50 percent or less of the yield.

- **Diversified revenue sources:** Sources could include insurance premiums (e.g., UPMC¹⁰), specialty pharmacy (e.g., West Virginia University Medicine¹¹), venture fund/investments (e.g., Jefferson Health, Stanford Medicine^{12,13}), regional reference lab (New York-Presbyterian/Columbia University Irving Medical Center¹⁴), international projects (e.g., Partners/Harvard Medical International¹⁵, Johns Hopkins¹⁶), real estate (e.g., Boston Medical Center, Nationwide Children's¹⁷), among other businesses and activities based on the AHC's expertise (e.g., Vanderbilt Health Rx Solutions¹⁸). Many AHCs and community health systems have successfully built these revenue streams in related or semi-related businesses to diversify their revenue streams and protect against a trend that might impact their traditional patient volume. However, these efforts require years to develop profitability, and may also become a distraction from maintaining the success of the core business. In addition, changes in reimbursement and new entrants or disrupters can rapidly change the economics and attractiveness of some of these businesses.

CONCLUSIONS

Health care institutions in the US are subject to challenging economics, given the complex structure of government, commercial, and private reimbursement as well as the variability and unpredictability of other key sources of financial support. AHCs face additional challenges because of their need to support research, education, and other academic activities, the vast majority of which do not produce a positive margin. However, sustaining AHCs is vital to health and health care, not only in the United States but worldwide, and therefore these institutions must find ways to assure continued financial sustainability.

To ensure AHCs' sustainability now and in the

future, the following should be considered:

- It is imperative to understand how the academic enterprise is funded today to ensure that the support provided is being used effectively. This requires transparency between the AHC clinical and academic enterprises, including an understanding of how costs are allocated and investments are made for academic activities within medical school component departments.
- Understanding how the academic enterprise will be funded over the next five to ten years also is critical, particularly for those organizations seeking to expand their research footprint. AHCs must weigh the risks and benefits of expanding their academic enterprise activities in response to large, limited-term funding (either from government or private sources), particularly without establishing secure funding to support ongoing investments that will be required to sustain these activities as time-limited sources conclude.
- Funds flow models that include clinical and other research-related economic incentives can be used to improve the cost effectiveness of the academic enterprise investment while also stimulating clinical enterprise productivity. However, these incentives must be sufficiently localized to motivate department chairs and faculty to make the difficult changes needed to improve performance. Macro-level incentives based on institutional performance may be too far removed from chairs and faculty to achieve the needed changes.
- AHCs are finding that expansion of clinical enterprise scale is essential for maintaining a competitive profile in the health system marketplace, including payor essentiality and referral patterns. Expansion of the clinical enterprise is equally essential to addressing the increasing costs of the academic enterprise, but increasing academic expense can only be supported if they do not compromise the requisite operating margins of the clinical enterprise. The challenges of these efforts are numerous and can include margin erosion and brand dilution as well as management challenges associated with community practices and hospi-

tals that are less well integrated with the main campus. Titrating the rate and pace of clinical enterprise expansion is essential to ensuring AHC leadership can effectively manage these challenges.

- Strong and aligned leadership is critical to navigate increasingly difficult AHC economic challenges. Increasing diversity within the leadership ranks is crucial, as diverse teams have better chances of surfacing novel approaches to solving management problems. Chair packages continue to pose an economic challenge as they consume a meaningful portion of the academic investment, but more collaborative and close management in the deployment of these packages as system investments can yield better returns.
- While AHCs function under a broad array of clinical enterprise governance models, alignment on strategy and funding models among key leaders is critical to success. In those AHCs that are owned by universities, as the clinical enterprise portion of the overall university revenue base and debt profile grows, the relationship between the health system and the university inevitably comes under increased stress. In some cases, university—AHC relationships are being restructured to provide greater financial and operational autonomy and independence. These evolving organizational models pose their own challenges and opportunities for balancing clinical and academic enterprise priorities.

Academic health centers provide immeasurable benefits to society through their research and innovation, their leadership in providing patient care, and their medical education and training. Policy makers should seek to protect this social good by considering the following:

- Government reimbursement for research must come much closer to covering the actual costs of research. The US has become the world's premier biomedical research innovation engine through its sizeable investments in government-sponsored research. While private foundation grants and industry funding also support research at AHCs, the majority of research funding comes from the govern-

ment. However, government funding often covers only a fraction (50 to 60 cents on the dollar, in most cases) of actual research costs. Increased research funding that covers more of the actual cost will limit the need for academic health centers to close the differential through increasingly stressed health care margins from commercial revenue.

- In the absence of increased government funding for research, regulatory models that limit the ability to earn reasonable margins on privately insured patients would make it impossible to sustain the current research funding model. In recent years there has been increased interest by some political candidates in expanding government health care reimbursement models to the entire general public. Given the massive cross-subsidization from AHC clinical enterprise margin that occurs today, expansion of government provider rates in the absence of other mechanisms to fund the academic enterprise would be impossible to sustain. When weighing such expansion proposals, policy makers must protect the nation's health care and biomedical innovation and training engine and ensure solutions that sustain funding for these societal benefits.

Sustaining a successful and robust academic enterprise in the future will require creativity, fortitude, and teamwork from our academic leaders and policy makers. Together, they can protect the model that has led to so many of the medical advancements of the 20th and 21st centuries and preserve it for many generations to come.

References

All links accessible as of March 2022

- ¹ Hut, N. 2021. “The COVID-19-Induced Surge in Healthcare Labor Costs Is Testing Hospitals and Health Systems.” Healthcare Financial Management Association, November 30, 2021. Available at: <https://www.hfma.org/topics/hfm/2021/december/soaring-labor-costs-stemming-from-covid-19-test-hospitals-and-he.html>.
- ² The Centers for Medicare and Medicaid Services. CMS Fast Facts. Available at: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/CMS-Fast-Facts>.
- ³ Health Resources and Services Administration Overview. Available at: <https://www.hrsa.gov/opa/index.html>.
- ⁴ Moody’s Investor Services. 2021. “Not-for-Profit and Public Healthcare—US, Medians—Pandemic Hits Academic Medical Centers Harder Than Other Hospitals in 2020.” September 29, 2021. Available by subscription or purchase only at: https://www.moody.com/login?ReturnUrl=http%3a%2f%2fwww.moody.com%2fresearchdocumentcontentpage.aspx%3f%26docid%3dPBM_1303634.
- ⁵ The Blue Ridge Academic Health Group. 2020. Report 24: *The Behavioral Health Crisis: A Road Map for Academic Health Center Leadership in Healing Our Nation*. Winter 2019–2020. Available at: <http://whsc.emory.edu/blueridge/publications/archive/Blue%20Ridge%202019-2020-FINAL.pdf>.
- ⁶ National Conference of State Legislatures. State Actions to Close Budget Shortfalls in Response to COVID-19. Available at: <https://app.powerbi.com/view?r=eyJrIjoiZjhmODk1MjctOTc3Ni00MDE3LTgyNGUtZjNkYTtk3NTQ1OTU5IiwidCI6IjM4MmZiOGIwLTRkYzMtNDEwNy04MGJkLTM1OTViMjQzMmZhZSIsImMiOiJZ9>.
- ⁷ US Government Accountability Office. 2021. Physician Workforce: Caps on Medicare-Funded Graduate Medical Education at Teaching Hospitals. May 21, 2021. Available at: <https://www.gao.gov/products/gao-21-391>.
- ⁸ The Blue Ridge Academic Health Group. 2017. Report 21: *The Academic Health Center: Delivery System Design in the Changing Health Care Ecosystem—Sizing the Clinical Enterprise to Support the Academic Mission*. Spring 2017. Available at: <http://whsc.emory.edu/blueridge/publications/archive/blue-ridge-2017.pdf>.
- ⁹ Dipanjan N., A. Gupta and A. Turo. 2020. “The Evolution of University Technology Transfer: By the Numbers.” *IP Watchdog*, April 7, 2020. Available at: <https://www.ipwatchdog.com/2020/04/07/evolution-university-technology-transfer/id=120451/>.
- ¹⁰ UPMC Health Plan (Overview). Available at: <https://www.upmchealthplan.com/>.
- ¹¹ Headley M. 2020. “Health System-Owned Specialty Pharmacies Gain New Voice.” *Patient Safety and Quality Healthcare*, November 12, 2020. Available at: <https://www.psqh.com/analysis/health-system-owned-specialty-pharmacies-gain-new-voice/>.
- ¹² Dyrda L. 2020. “20 Health Systems with Investment Arms.” *Becker’s Health IT*, August 6, 2020. Available at: <https://www.beckershospitalreview.com/digital-transformation/20-health-systems-with-investment-arms.html>.
- ¹³ Stanford Health Innovation Lab (Overview). Available at: <https://innovations.stanford.edu/about>.
- ¹⁴ New York-Presbyterian Columbia University Irving Medical Center. Test Directory. Available at: <https://www.testmenu.com/nyphcolumbia>.
- ¹⁵ The Harvard Gazette. 2008. “Partners HealthCare to Assume Management of Harvard Medical International.” April 24, 2008. Available at: <https://news.harvard.edu/gazette/story/2008/04/partners-healthcare-to-assume-management-of-harvard-medical-international/>.
- ¹⁶ Rosson, N. J. and H. T. Hassoun. 2017. “Global Collaborative Healthcare: Assessing the Resource Requirements at a Leading Academic Medical Center.” *Globalization and Health*, September 20, 2017. <https://globalizationand-health.biomedcentral.com/articles/10.1186/s12992-017-0298-5>.
- ¹⁷ Chisholm, P. 2018. Why Hospitals Are Getting into the Real Estate Business. National Public Radio, August 19, 2018. Available at: <https://www.npr.org/sections/health-shots/2018/08/19/639415302/why-hospitals-are-getting-into-the-real-estate-business>.
- ¹⁸ Vanderbilt Health Rx Solutions. Available at: <https://www.vanderbilthealthrxsolutions.com/>.

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The Blue Ridge Academic Health Group studies and reports on issues of fundamental importance to improving the health of the nation and its health care system and enhancing the ability of the academic health center (AHC) to sustain progress in health and health care through research—both basic and applied—and health professional education. In 24 previous reports, the Blue Ridge Group has sought to provide guidance to AHCs on a range of critical issues (See titles, above).

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