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*Future of Academic Medicine Series*

# Next-Generation Funds Flow Models

## *Enhancing Academic Health System Alignment*

October 2018

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Next-Generation Funds  
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***Enhancing Academic Health  
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**October 2018**

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# The Funds Flow Learning Collaborative (FFLC)

## PURPOSE

The AAMC and Manatt Health hosted a Funds Flow Learning Collaborative (FFLC) from August 2017 to April 2018 with the goal of developing principles to guide the next generation of funds flow models. This report summarizes the findings and recommendations for the resulting next-generation funds flow models.

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# Executive Summary

## BACKGROUND

The promise of academic medicine is to create new knowledge, train the next generation of practitioners, and advance standards of patient care. The funding (or oil that lubricates this powerful engine) of innovation across the research, education, and clinical missions is referred to as “funds flow.” Just as an engine that is starved of oil seizes, an academic center starved of funds will convulse. In addition to securing clinical and administrative services, funds flow enables faculty recruitment and program development, supports investment in new areas of research, and facilitates the delivery of educational programs insufficiently supported by tuition or public funds. Implementing the optimal funds model for an academic health system (AHS), which entails balancing its aspirations with its capacity to invest, thus becomes one of the pivotal leadership challenges for today’s deans, CEOs, and department chairs. For the purposes of this report, an AHS is defined as an entity made up of at least one primary teaching hospital, a medical school, a faculty practice plan (FPP), other clinical affiliates, and sometimes a parent university. “AHS” is used instead of “academic medical center” since these organizations are increasingly a health system or part of a larger health system of academic and community hospitals and physicians. An AHS can also have integrated or independent governance across the entities as well as major affiliate relationships that comprise the AHS.

Over the last decades, a labyrinthine tangle of negotiated support agreements among the hospital, FPP, clinical affiliates, departments, medical school, and parent university have evolved at most AHSs. These legacy funds flow arrangements served the basic needs of compensating the faculty for their work efforts and subsidizing the growth of academic programs. Since the 1990s, due in part to changes in reimbursement that enhanced technical over professional fees and in part to the extensive growth of research programs and net real declines in National Institutes of Health (NIH) funding, the academic missions became increasingly dependent on the clinical margin of their affiliated hospitals and health systems. Because of their success in attracting patients and negotiated pricing, these hospitals and health systems were able to vastly increase their clinical income over this same period and thus support the expansion of research programs.

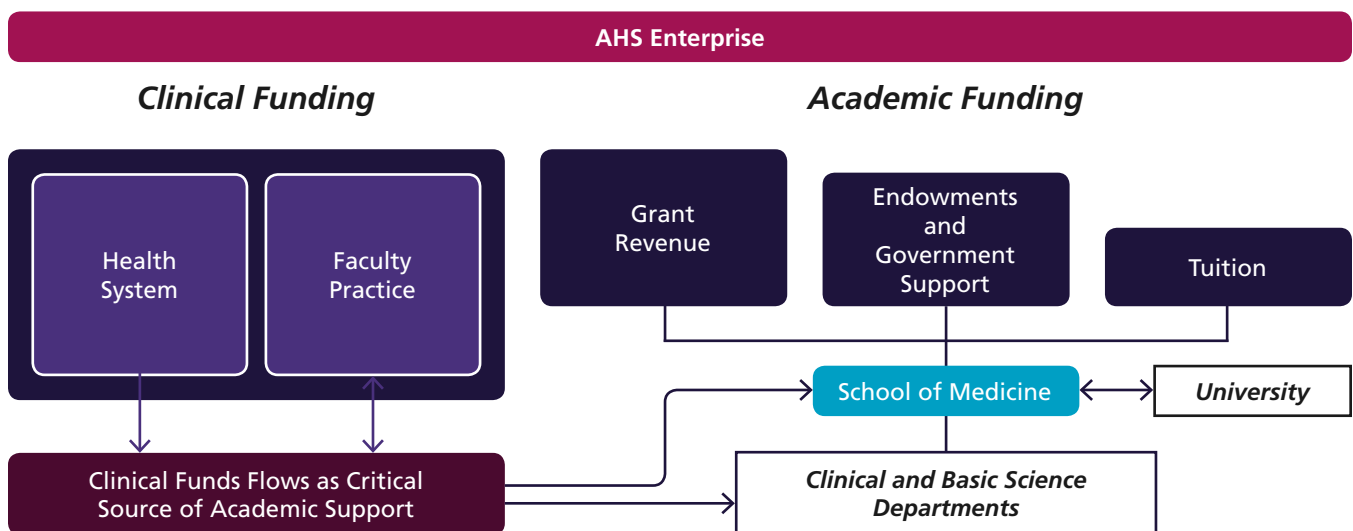


Figure ES.1. Conceptual example of funds flow to support the academic mission.

The economy of AHSs is profoundly threatened by the erosion of the implicit subsidies that have supported the research and educational expansion. The interdependent economies of AHSs are poorly equipped to cope with flat or downside financial changes because their funds flow models lack flexibility on the downside and incentive structures to stimulate new support on the upside.

Many AHSs are experiencing reimbursement erosion in their hospitals and FPPs due to government and commercial payer rate reductions, and are expecting to have substantially less operating income with which to fund the academic missions. Simultaneously, while the overall NIH budget has increased over the past few years, after adjusting for inflation, the agency's purchasing power still falls 11% below the funding level from 15 years earlier. Additionally, the annual process for appropriating federal funding is unpredictable from year to year.

As such, continued growth in the research enterprise consistently requires more and more financial support from other revenue streams, including clinical dollars. Figure ES.1 illustrates a conceptual example of funds flow to support the academic mission. The Association of American Medical Colleges (AAMC) recently calculated that the overall average investment in the research mission for a surveyed group was 53 cents for every dollar of extramural funding received. Concomitantly, assessments on professional fees have grown as clinical departments seek to support their research programs and their national standing. In some markets the assessments on professional fees are limiting the potential of the faculty to compete due to their high prices or are impeding their ability to integrate with community physicians. The call for increased clinical contribution to support the missions comes at a time when health systems are investing in diversification, ambulatory platforms, and regional growth, further straining their ability to invest in research and educational programs.

Scarce funding and complex funds flow formulas create internal tension for the AHS enterprise, resulting in potentially serious organizational dysfunction as clinical and academic leaders each strive to direct resources to their respective agendas.

Recognizing the essential interdependence of the missions and the organizational peril that comes from discord, many deans, CEOs, and department chairs are increasingly committed to an agenda of strategic and financial alignment within the AHS enterprise. "Our money, our collective success" is becoming a more common vision wherein shared risk and reward accompany strategic resource allocation decisions. For these leaders, a funds flow model that promotes alignment, substantiates clear decision making and resourcing for each of the missions, and optimizes the institutional capacity for financial performance becomes the *sine qua non* of the next-generation AHS.

In this report we have considered three interlinked components of funds flows: enterprise commitments, strategic funds flow, and faculty compensation.

- Enterprise commitments are focused on the sustainability of the AHS enterprise. These commitments should be based on an enterprise strategic plan that defines priorities and capacity for investment. Enterprise commitment models may include a base level of academic support plus a combination of incentives for growth and margin, as well as other strategic success measures.
- Strategic funds flow is an investment in growth and includes performance incentives, academic investment, and clinical program investment and support. These investments should create a "shared risk, shared reward" culture of collaboration across the AHS and underpin the resource mechanisms of strategic investments such as service lines. Investment from clinical enterprise funds can be considered R&D investments with the goal of creating synergy between discovery and clinical priorities. In this manner, academic and clinical leadership come together to define priorities, assess financial capacity, and consider talent acquisition and program differentiation.

- Faculty compensation encompasses faculty professional compensation and services required by the clinical enterprise, namely, medical directorships, medical education, and purchased clinical services. Faculty compensation models should be considered part of funds flow because they are integral to enhancing alignment. Purchased clinical services should have clear mechanisms to track the provision of the services and include performance metrics where appropriate.

Equally important to these dimensions is the care and attention that must be given to the structure for managing funds flow processes while respecting and cultivating the deep integration and balance of the missions. Therefore, funds flow governance must bring together clinical and academic leadership organized around an enterprise-wide strategic and financial plan. The performance of the enterprise and entities must be transparent and guided by leaders who value the academic mission and appreciate the synergy potential of aligning clinical and academic priorities. In this manner, the promise of academic medicine may be realized in the years ahead, as it has in the decades past.

## RECOMMENDATIONS

Based on the common challenges and themes that emerged from the FFLC's work, the following recommendations can serve as guiding principles as AHSs transition to the next generation of funds flow models.

1. **Agree on an enterprise-wide, multiyear strategic and financial plan and align resources to maximize the capacity to invest.** Imbalanced resource allocations — whether to the school of medicine (SOM), departments, or health system — will inevitably skew the organization's adaptive capacity and introduce significant elements of operating risk. Academic support agreements should be sufficiently flexible to enable the clinical system to adapt to and thrive in evolving and dynamic markets.
2. **Convert historical arrangements into a transparent funds flow agreement linked to the strategic and operating plans.** Funds flow transparency is a fundamental condition of effective leadership, faculty engagement, and fiduciary responsibility. Shared understanding of the fiscal economies of all enterprise constituent components is a precondition for rational decision making.
3. **Consider funds flows transfers as investments.** Transfers of clinical income should be disciplined investment decisions with established rules and a process for periodic recalibration, rather than entitlements or “patches” to particular issues. Perpetuation of funding commitments that have outlived their strategic value or mission imperative weakens the institution's capacity to reinvest.
4. **Commit to radical simplification of agreements.** Constructive reform efforts are impeded by persistent, elaborate, and byzantine arrangements that often extend to hundreds or even thousands of agreements. The new formulas employed should be commonly understood and impervious to manipulation.
5. **Convert “entity responsibility” to shared responsibility and shared incentives for enterprise-wide performance.** In some significant measure, the leaders of the professional schools, the FPP, and the hospitals or health system must share financial and operating responsibility for the success of the entire enterprise, which should be expressed through their respective and linked incentive compensation goals.
6. **Combine entity-specific productivity expectations with shared enterprise-wide financial performance goals.** Each component of the enterprise must be held accountable to the same discipline to operate at its optimal productivity level, within the context of evolving value-based reimbursement arrangements.



7. **Rebuild faculty compensation models through FPP standards and corresponding faculty tracks to align with strategic goals.** Redefine base salary service expectations and incentive compensation ranges. Apply common AHS controllable metrics, aligned with AHS strategic goals, as well as shared and personal goals for productivity, access, and service expectations in FPP incentive payment formulas.

# Chapter 1

## Organizational Characteristics of the FFLC Participants

Funds flow models will, of necessity, be institutionally specific due to their organizational characteristics. For example, public institutions may have to maintain “arm’s length” arrangements for their FPPs, requiring elaborate funds transfer policies. Private institutions with affiliated (rather than integrated) corporate structures (e.g., between the SOM and the health system) may rely upon negotiated umbrella agreements. Institutions that are fully integrated may use budgetary and formula solutions.

The chart below shows the organizational characteristics and degree of governance integration among the FFLC participants. While Penn Medicine and Nebraska Medicine did not participate in the FFLC, they did generously share insight and examples from their own recent work on funds flow models. Because their examples appear later in this report, we’ve included them in the chart below.

**Table 1. FFLC Participants: Degree of Governance Integration at the Academic Health System (AHS)**

Type of AHS	Integrated Governance	Independent Governance
Private	Keck Medicine of USC	UF Health Jacksonville
	Penn Medicine*	Yale New Haven Health
Public	Penn State Health	USF Health/Tampa General Hospital
	UAB Medicine	
	Upstate Medical University	
	UT Southwestern Medical Center	
	Nebraska Medicine*	

\*Contributor only.

These material differences deeply influence how changes to the funds flow model can be introduced. This report seeks to focus on those principles and methods that have broad applicability across institutional and corporate structures.





## Chapter 2

# Alignment of Funds Flow Within Academic Health Systems

Funds flow models are inextricably linked to the nature and degree of organizational, strategic, and financial alignment among the constituents of an AHS. Table 2 summarizes various characteristics that relate to the degree of alignment observable across AHSs and that strongly influence an institution’s funds flow model.

**Table 2. Possible Configurations of Organizational Alignment Among Members of an AHS**

Characteristic	Degree of Organizational Alignment		
	Low	Medium	High (Enterprise Aligned)
<b>Strategic Plan</b>	<ul style="list-style-type: none"> <li>No enterprise or cross-mission strategic plan</li> <li>Investments in growth and academic mission on a case-by-case basis</li> </ul>	<ul style="list-style-type: none"> <li>No enterprise or cross-mission strategic plan</li> <li>Defined academic funding model that includes an enterprise performance incentive</li> </ul>	<ul style="list-style-type: none"> <li>Enterprise strategic plan that aligns academic priorities with clinical strategies</li> <li>Defined academic investment strategy tied to the strategic plan and linked to aligned funding capacity</li> </ul>
<b>Clinical Enterprise</b>	<ul style="list-style-type: none"> <li>Hospital and FPP operate as distinct entities</li> </ul>	<ul style="list-style-type: none"> <li>Hospital and FPP operate in highly coordinated manner</li> </ul>	<ul style="list-style-type: none"> <li>Hospital and FPP are integrated as a clinical enterprise or its equivalent</li> </ul>
<b>Role of Health System</b>	<ul style="list-style-type: none"> <li>Arm’s length relationship with SOM</li> <li>Limited visibility and transparency in use of SOM funds flows</li> <li>Separate negotiation with each clinical department chair for compensated services</li> </ul>	<ul style="list-style-type: none"> <li>Aligned around joint investment approach</li> <li>Visibility and transparency of SOM funds flow and use</li> <li>Coordinated compensated services agreement across departments</li> <li>Supportive of academic mission and research investments</li> </ul>	<ul style="list-style-type: none"> <li>Part of decision-making governance for academic investment funding and program investments</li> <li>Highly collaborative and transparent</li> <li>Highly supportive of academic mission</li> </ul>
<b>Role of SOM</b>	<ul style="list-style-type: none"> <li>Limited role in department financial management</li> <li>SOM funds flow through assessment on professional revenues and negotiated transfers from health system</li> <li>Significant reserves held in departments</li> </ul>	<ul style="list-style-type: none"> <li>Fiscal coordination across SOM and departments to optimize financial capacity for investment</li> <li>Unified budgeting process across departments and SOM</li> <li>Visibility and transparency of health system’s financial decisions</li> <li>Coordination of reserve levels across departments</li> </ul>	<ul style="list-style-type: none"> <li>Part of decision-making governance for clinical investment funding and program investments</li> <li>SOM and departments are unified for financial and operations management</li> <li>Highly collaborative and transparent</li> <li>Highly supportive of clinical mission</li> </ul>

*Continued*

Table 2 Continued

Characteristic	Degree of Organizational Alignment		
	Low	Medium	High (Enterprise Aligned)
<b>Role of FPP</b>	<ul style="list-style-type: none"> <li>Federated</li> <li>Departmentally based recruitment plan</li> </ul>	<ul style="list-style-type: none"> <li>Integrated faculty practice organization with shared governance</li> <li>Coordinated clinical recruitment plan for cross-SOM program investments with a process that defines funding support and requirement</li> </ul>	<ul style="list-style-type: none"> <li>Well-organized program development that has defined funding sources and requirements</li> <li>Engages FPP, department, health system, and service line leadership to optimize strategic decision making and use of resources</li> </ul>
<b>Role of Department</b>	<ul style="list-style-type: none"> <li>Full responsibility for the P&amp;L of clinical, education, and research missions with significant operating autonomy</li> <li>Negotiates with health system for resources</li> <li>Research support from a tax on clinical revenues</li> </ul>	<ul style="list-style-type: none"> <li>High teamwork with other departments, SOM, and health system</li> <li>FPP governance role emphasized</li> <li>Embraces service line programs</li> </ul>	<ul style="list-style-type: none"> <li>Responsible for recruitment and development of faculty supporting all missions</li> <li>Highly collaborative and able to function in a matrix organization</li> <li>Performance focused and aligned with enterprise objectives</li> </ul>
<b>Clinical Faculty</b>	<ul style="list-style-type: none"> <li>Production-driven incentive model</li> <li>May include additional metrics</li> </ul>	<ul style="list-style-type: none"> <li>Largely production-driven incentive model that may include engagement, quality, and other hospital- and department-based metrics</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive performance incentive model with FPP-driven production, value-based metrics, academic goals, and department or program components</li> </ul>
<b>Funds Flow Model</b>	<ul style="list-style-type: none"> <li>Ad hoc agreements with limited centralized structure</li> <li>No enterprise-wide incentive model between AHS and SOM</li> <li>Limited service line alignment model with health system</li> <li>Generally “historical” funding arrangements; may have standard agreements for some services</li> <li>Embedded cross-subsidization in compensated service agreements</li> </ul>	<ul style="list-style-type: none"> <li>Formal funds flow oversight (“governance”) process</li> <li>Explicit recognition of academic investment by health system and concomitant enterprise-wide incentive model</li> <li>Strong service line alignment model with health system</li> <li>Standardized agreements for compensated services</li> </ul>	<ul style="list-style-type: none"> <li>Enterprise goals and metrics that are comprehensive for all missions (e.g., volume, financial, quality, engagement, impact)</li> <li>Alignment model for service lines between health system and FPP</li> <li>Omnibus and standardized agreement for compensated services</li> </ul>

Institutions with a highly federated structure tend to have a low degree of alignment between their funds flow models and their strategic aspirations. Beneficiaries of funds flows are resistant to change, and the negotiated arrangements are typically not linked to an enterprise-wide strategic plan that specifies resourcing priorities. In the absence of an agreement on strategy, and in the absence of an aligned governance and management model to achieve it, leaders in the institution seek to maximize their particular economic and programmatic standing. In these environments, department chairs function

more like CEOs of their departments than as team leaders of their respective services. Unusual conditions may result: the central SOM administration may be in deficit while clinical departments bank reserves; some clinical services will be overcompensated and others undercompensated, exaggerating their underlying financial performance; and required services for the good of the whole may go undeveloped. At these institutions, the academic missions are likely to come under greater stress due to limited investment funding provided to the dean and poor resource allocation for research development across the departments.

Institutions that operate as financially aligned enterprises have the benefit of being able to assess how to maximize the fiscal capacity of their constituent components and therefore to meet investment requirements across the missions. Whereas at most institutions there is likely to be healthy debate regarding health system growth relative to academic priorities, those that are financially aligned have reduced the friction associated with making these determinations. As a tactical matter, some institutions may benefit from establishing guidelines regarding departmental reserve levels and encouraging risk and reward sharing among the departments to enhance group practice performance. Guidelines may also address the performance of chronic deficit departments, as well as FPP “receivership” powers to implement corrective actions.

Those few AHSs with an evolved enterprise-wide funds flow model have focused particular attention on optimizing the sustainability of their respective missions while also introducing incentives for realizing clinical and margin growth. Their CEOs and deans tend to be highly collaborative leaders who work closely with department chairs, who in turn thrive by being able to recruit the best talent and foster collaboration toward shared goals. These institutions will likely have the financial wherewithal to simultaneously deepen their specialty medicine capacity while also leading in population health management and being able to maneuver effectively in risk-based alternative payment models. Financial success for these institutions will sustain the academic missions while also supporting new opportunities for academic program expansion vital to long-term, margin-positive, system-wide growth.



# Chapter 3

## Funds Flow Dimensions and Methodologies

The assessment of funds flow models can be broken down into three dimensions: enterprise commitments; strategic funds flow; and faculty compensation (Figure 1). These are the interrelated building blocks of funds flow. They each exhibit distinct characteristics, require distinct treatment, and should be distinctly considered as an essential component of an institution’s financial economy. Performance incentives, academic investment, and clinical program investment and support are enterprise strategies. They promote alignment and support the resourcing of strategic investments. Faculty compensation and compensated services include all types of payments that together comprise the faculty compensation source and model for the institution.

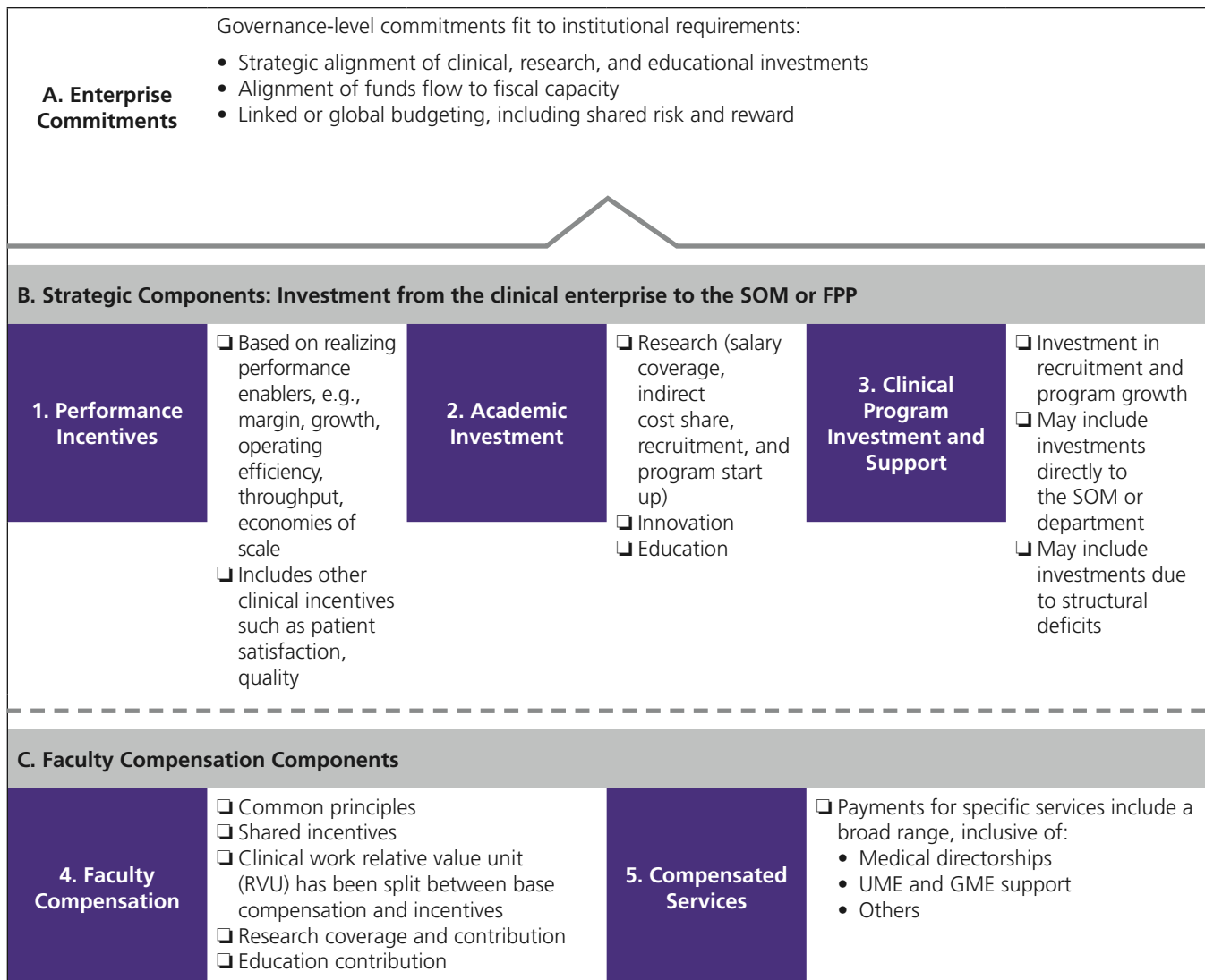


Figure 1. Dimensions of funds flow.



## ENTERPRISE COMMITMENTS: ACHIEVING GREATER ENTERPRISE ALIGNMENT THROUGH COMPREHENSIVE PERFORMANCE MANAGEMENT AND INCENTIVES

Ensuring the vitality of the academic missions through the ongoing investment of clinical margins in research and educational programs is fundamental to the long-term health of every AHS. Equally important is the ability of the academic mission to leverage these investments optimally and efficiently in alignment with enterprise goals and overall financial capacity. At some institutions, enterprise funds are directed from the clinical to the academic missions, providing a defined baseline-level investment, while also linking new investments to the financial capacity of the clinical enterprise. In certain cases the financial capacity may be increased by the acquisition of community-based sites. The rationale for gaining financial support from clinical affiliates is to create value through the use of the AHS brand, implementation of clinical research and innovation networks, access to specialty programs, and extension of educational programs to community sites.

These institutions are agreeing on a “baseline” funding level set within the context of current and projected fiscal capacity. Baseline funding provides predictability for the management of academic programs and smooths year-to-year fluctuations in federal and other funding sources. Additional investments from the clinical system beyond that defined level are based on realizing increased clinical income through productivity gains and growth. Such a model has appeal due to its inherent flexibility to adjust to the changing conditions of the clinical system.

Enterprise commitments, where they exist, tend to be structured to include some or all of the following four features:

- Base academic support payments, which supply “floor funding,” generally indexed to a measure of inflation
- Growth components, measured on net revenue, and in certain cases paid as a transfer calculated based on a percentage of total net or increment above baseline:
  - Based on enterprise revenue
  - Based on professional revenue
- Margin components payments:
  - Based on net or operating income
  - Based on exceeding some budget (e.g., operating income )
  - Based on net cash generation or earnings before interest, depreciation, and amortization (EBIDA)
  - Based on growth of one or more of the above components year over year
  - As some form of “bottom-line split”
- Nonfinancial strategic success component:
  - Based on improvement in patient experience and quality measures
  - Based on improvements in national rankings and an AHS’s internal clinical and academic metrics

Several of the FFLC participants and contributors have been successful with such enterprise commitments. Examples from the FFLC and another noteworthy AHS are described below.

**Penn State Health**, a public and integrated AHS of Penn State University, recently redesigned its funds flow model in 2017. The impetus was a major partnership with Highmark to build two community hospitals and expand the AHS’s employed nonacademic physician capacity. Commitment to the academic mission was a key focus for Penn State Health in the partnership, and designing a funds flow model that would support a developing system and the partnership was critical.

The new model eliminated all taxes and implemented an enterprise-wide incentive program with fixed, growth, and risk/reward components. The growth component was based on net patient revenue and tied to the system, with a higher percentage for the system (up to revenue levels), and a lower percentage for the community and ambulatory components (so they remained competitive in the marketplace). The margin share component was set as a percentage of the operating margin with EBIDA thresholds to ensure that the clinical enterprise can generate sufficient capital to meet its financing needs.

**The University of Arizona (UA)** in 2015 approved the merger of its clinical enterprise, the University of Arizona Health Network (a hospital and FPP) with the Banner Health System.<sup>1</sup> As part of this transaction, UA's two SOMs, in Tucson and Phoenix, received a 30-year commitment from Banner Health for financial support of the academic mission. Among other terms, the agreement specified that for the first 15 years the following annual support will be provided:

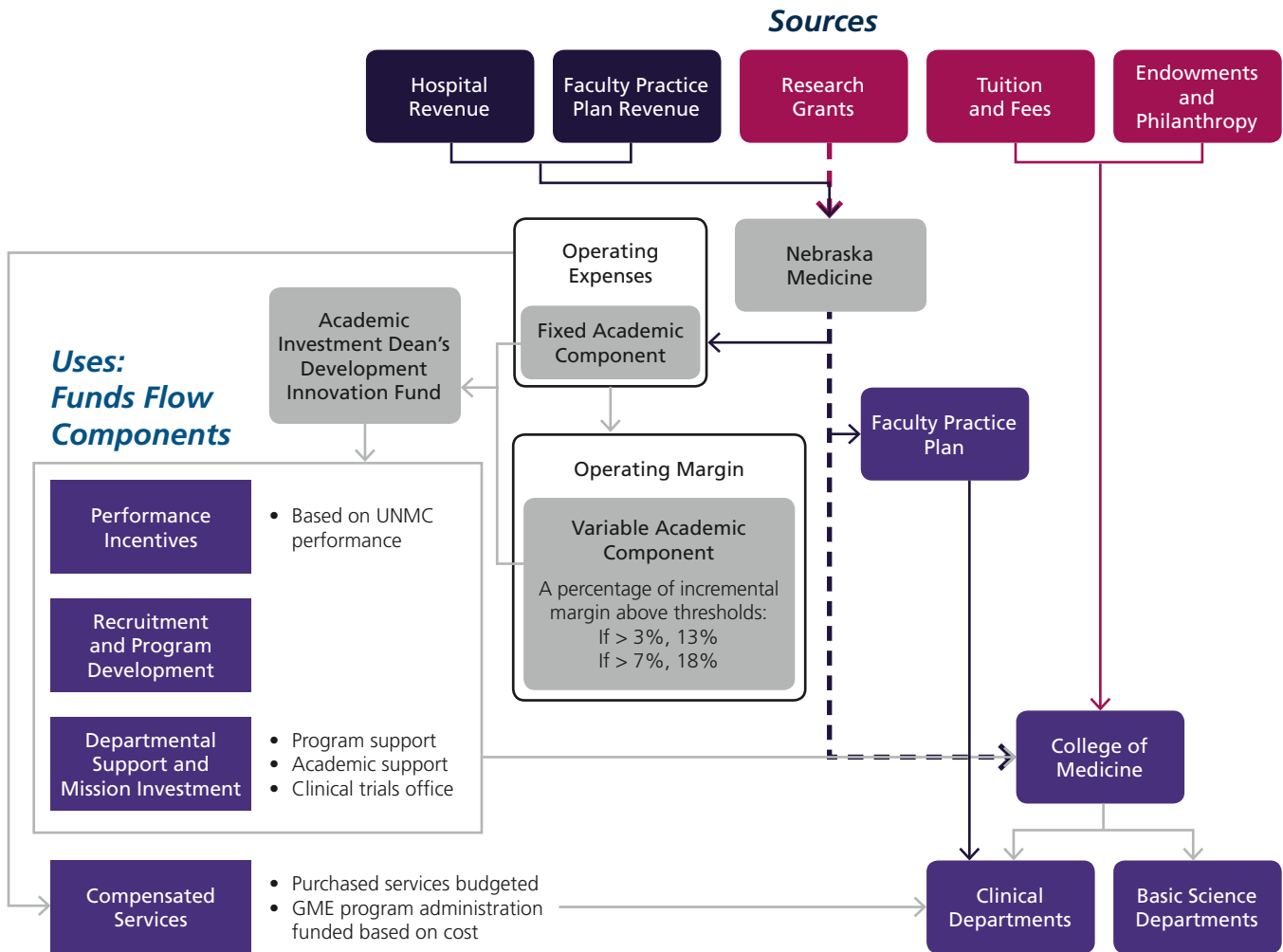
- Historic funds flow: an agreement by Banner to preserve the preexisting funds flow among the clinical and academic enterprises
- Incremental funds flow: an additional \$20 million per year for support of the clinical enterprise
- Variable funds flow: based upon 50% of the combined operating income of the academic medical center components (University Physicians Healthcare, University Medical Center, and Banner Good Samaritan) in excess of a combined operating margin of 5%
- Academic enhancement fund: Banner agreed to contribute \$300 million to fund an annual \$20 million payment to the SOMs in Tucson and Phoenix; an amount guaranteed by Banner for the 30-year academic affiliation period

The relationship between UA and Banner remains a work in progress, with continued repositioning of the clinical enterprise awaiting completion in 2019 of Banner's nearly \$1 billion investment in clinics and new teaching hospital towers in Tucson and Phoenix, which will replace aging facilities.

**Nebraska Medicine**, the clinical enterprise affiliated with the University of Nebraska College of Medicine (UNCOM), was created in 2015 as a 50-50 joint venture between the University of Nebraska and Clarkson Regional Health Services (Figure 2). All clinical revenues flow through Nebraska Medicine, which has enabled it to implement broad-based performance incentives at all levels — from the enterprise to the clinical faculty. Funds flow was completely redesigned to eliminate all taxes. Instead of a tax-based model, two funds were established:

- A dean's development innovation fund (DDIF) for academic funding and support. The DDIF is funded by Nebraska Medicine, based on a fixed and variable payment to UNCOM.
  - The fixed component ("baseline funding") is calculated as a per-faculty payment plus an agreed upon amount for historical dean's office funding. An inflation factor is applied. The funding level is set to be reviewed if Nebraska Medicine's margin falls below 2% or state funding for UNCOM falls by more than 5%.
  - For the variable component, UNCOM receives 13% of the incremental margin above a 3% clinical operating margin; and 18% of the incremental margin above a 7% operating margin.
- A science research fund established in a 501(c)(3) for academic enterprise growth.

In addition, through a revised academic affiliation agreement, Nebraska Medicine funds the net cost of graduate medical education (GME) with a committee to oversee the budget process.



**Figure 2. Nebraska Medicine funds flows.** The dashed line indicates that Nebraska Medicine invests a portion of its research dollars in the Dean's Development Innovation Fund, with the balance going to the medical school.

## STRATEGIC COMPONENTS

### Performance Incentives

Service lines are the next frontier of alignment as AHSs become broader systems of care that also must maintain and grow a sufficient network for the most specialized and complex services. The growth of AHSs requires leveraging the specialized resources of the clinical faculty in more distributed ways across a regional geography, which is an important service line role.

In general, alignment approaches may have the following goals:

- Align around service line growth and development: recruit faculty based on service line priorities, invest in technology and facilities for hospital and ambulatory settings, develop referral networks and collaborations, demonstrate a quality and safety difference, increase volume and margin

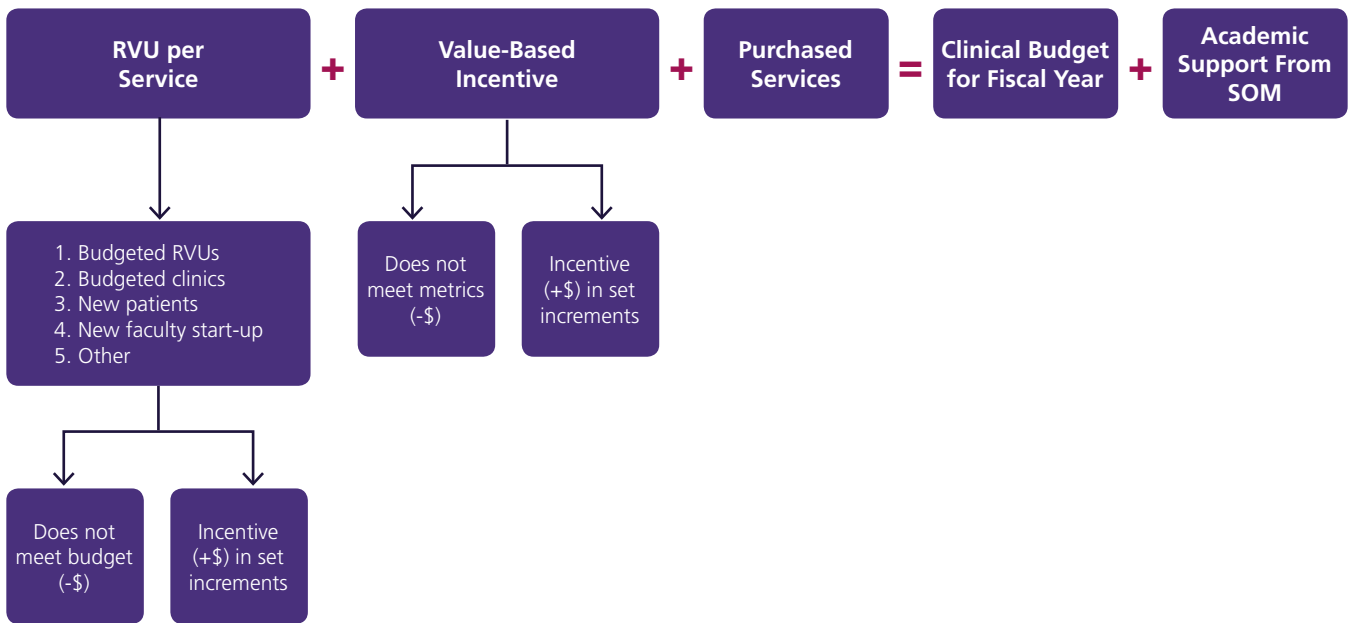
- Align across the related sites and types of services from inpatient to outpatient
- Align with the departments and divisions that source and care for patients to collaborate
- Provide a structure to compensate for under-reimbursed professional services that are also integral to the related services

Examples include the largest and most complex services (cancer, heart services, neurosciences, transplantation, and orthopedics), which require an extended referral network or base of patients to maintain and grow the programs and represent a substantial portion of contribution margin. Consideration should also be given to services such as pediatrics and primary care, where professional revenues do not cover expenses, but the strength of the service can greatly leverage referrals. At most AHSs, service line investments focus on the highest revenue and margin contributing services, as opposed to a systematic view of how best to organize all services in a system of care. Future models will need to be more holistic as systems develop to better support population health and outcomes.

Alignment models can focus solely on general performance incentives (e.g., revenues, margins, new patients, quality, access) for leveraging hospital funds. This could be achieved by allocating a portion of the hospital contribution margin based on a portion of work relative value units (RVUs) for all departments (See Appendix A: Legal Considerations). Separate from the allocation method, incentives can include ways to integrate services or align around capital or operating investments more comprehensively. Lastly, they can be used to balance areas where structural deficits are required for a service line’s success. Ultimately, the model needs to balance simplicity over complexity and be practical given the existing organizational structure and enterprise data capabilities. Below are some example approaches.

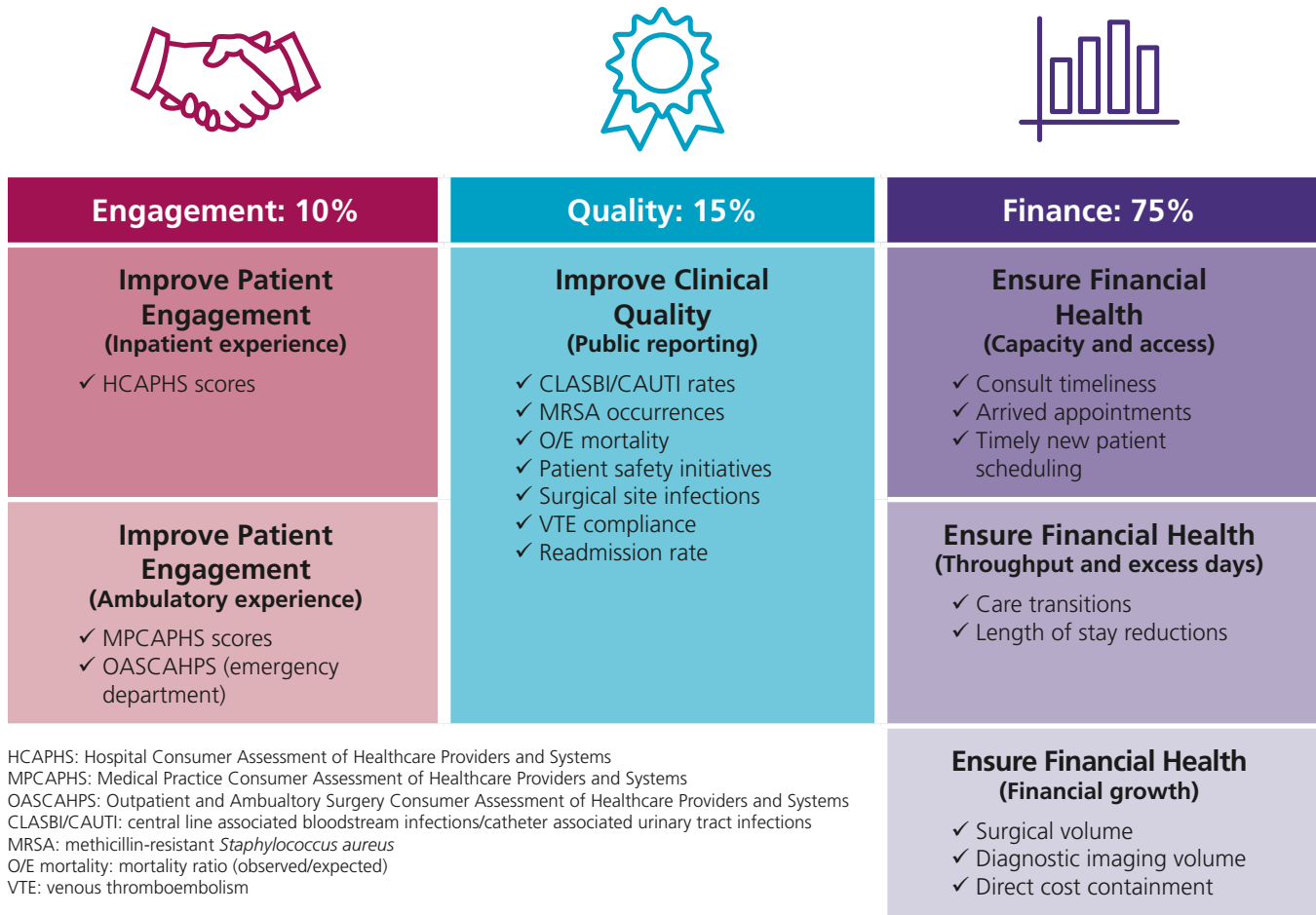
**Examples of Performance Incentives Used by FFLC Participants**

**UAB Medicine** has an enhanced RVU model that reimburses the clinical departments a set amount per RVU to pay for faculty and department overhead, with the clinical enterprise managing all practice operations (Figure 3). The RVU payment is based on the health system’s financial, quality, and engagement metrics, as well as value-based and population health goals.



**Figure 3. UAB Medicine clinical and departmental funding.**

Figure 4 is a diagram of the relative weighting and components of the Value-Based Incentive, which represents 10% of department funding.



**Figure 4. UAB Medicine value-based metric program.**

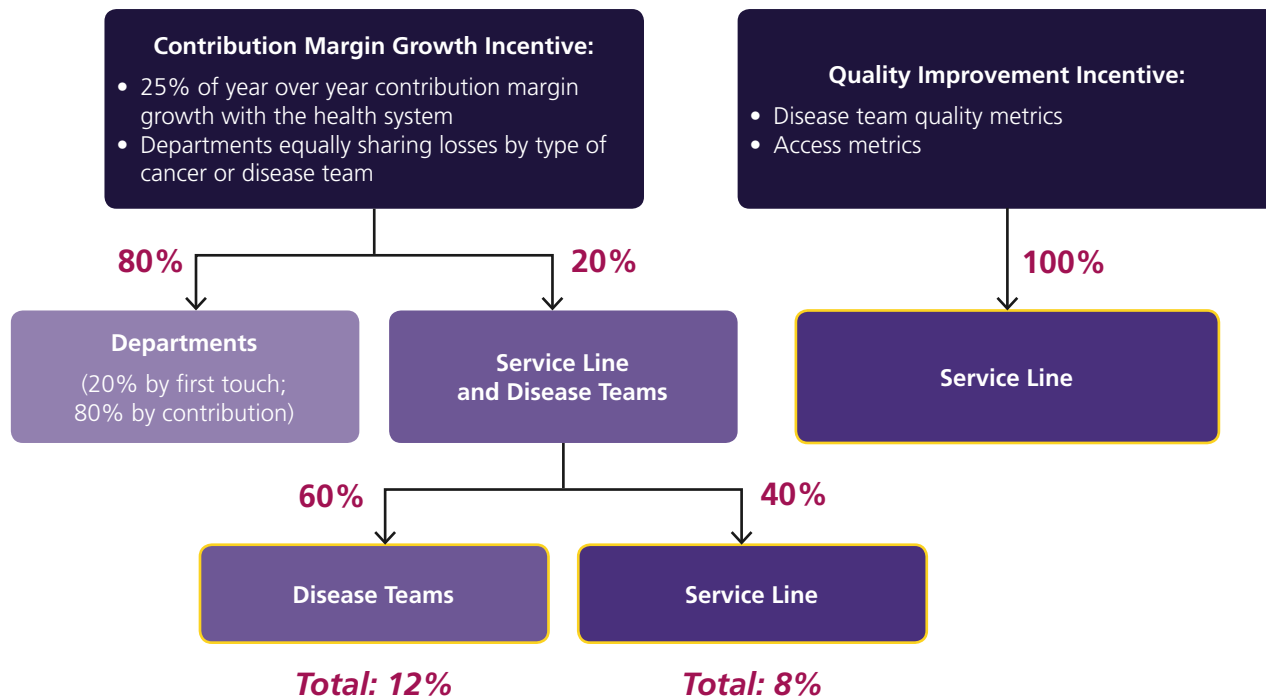
UAB Medicine considers its value-based metric program one of the most successful aspects of its funds flow model. Out of more than 100 metrics, over 90% of the payout was achieved, as well as growth in volume.

UAB Medicine is now evaluating a service line contribution margin model for large service lines (e.g., cardiac, neurosciences, transplantation, and cancer) that will reward departments and service line leaders based on profit and loss (P&L) performance and metric achievement.

**UT Southwestern Medical Center**, an integrated public AHS, has invested significantly in mission-based performance management capabilities and takes an “all funds” approach to funds flow for strategic decision making and investment. While the departments have a high degree of control, they have to manage to specific metrics that are transparent to the organization. Within several clinical services, memoranda of understanding (MOUs) have been developed to enable revenue and margin sharing as well as define performance metric expectations and incentives between the hospital and the SOM and clinical departments. This provides a vehicle to incorporate and align the multiple departments and disciplines that constitute a service line, address disciplines that require funding due to insufficient professional revenues, and formalize performance expectations. Examples include the cancer center, radiation oncology, and spine care.

**Yale New Haven Health** has organized itself broadly around service lines that have accountability for margin performance, strategic portfolio and physician recruitment, patient satisfaction, safety and quality, and employee engagement. The result is a “hospital within a hospital” operating model that forms the basis for quality, financial performance, and growth. Yale New Haven Health is now pressing forward to further integrate the clinical services. For example, it created the Interventional Vascular Center in concert with the SOM that integrates interventional radiology, interventional cardiology, podiatry, and vascular surgery into a unified clinical service, and introduced additional oncology and peripheral vascular services. Because the participating departments had legacy incentives that stimulated competitive behavior, a new faculty incentive model was implemented to reward the collective work RVU performance of the team and the development of new services and sites of care. Up to 15% of faculty compensation is at risk for these shared objectives. Requirements for a combined morbidity and mortality conference and consult service solidified the faculty commitment to the program. All case data are submitted to a common registry, and fellows benefit from an integrated training experience with the specialists participating in the program.

**Penn Medicine**, a fully integrated enterprise, has a very robust funds flow model that is based on a mission P&L foundation with expected and measurable metrics for evaluating performance. At the same time, it leverages institutional investments across the enterprise in a model that is highly collaborative and rules-based to balance areas for mission investment with areas that make significant contributions. Penn developed an innovative service line incentive model for cancer care when it was significantly enhancing its Comprehensive Cancer Center, including unifying accountability for the research and clinical programs under the center’s director. The cancer service line incentive model stimulates enhanced coordination and collaboration among the participating departments that contribute to the delivery of care for cancer patients. This incentive program distributes 25% of the year-on-year increase in cancer contribution margin for patients treated by the departments for nonbenign diagnoses. Eighty percent is allocated to the departments. Of this amount, 20% is allocated to the department that first saw the patient, and the remaining 80% is allocated based on the contribution to the care. The remaining 20% of the margin growth is allocated to service line and disease team infrastructure (with 60% to the disease teams and 40% to the service line). Separately, a quality incentive is attributed to the service line based on four goals developed each year with a potential value that is from 10% to 15% of the value contribution margin incentive. Figure 5 presents a diagram of this model.



**Figure 5. Penn Medicine cancer service line incentive distribution model.**

Through this approach Penn Medicine has experienced significantly enhanced collaboration, with resulting growth in the service line.

***New Incentive Models Related to Faculty Performance***

Recognizing that the work efforts of the clinical and basic science faculty enable an AHS to deliver on its promise of excellence and innovation, incentive models that align faculty toward enterprise value are essential for next-generation models. Most funds flow models developed over the last 15 years emphasize work RVU approaches for aligning faculty effort with institutional priorities. However, these models have distinct problems. For the less than full-time clinician, incentive models based only on work RVUs are dissatisfying as they seldom reach the productivity targets or, to do so, have to compromise their ability to participate meaningfully in research or educational activities. While work RVU incentives facilitate access for all patients, regardless of payer, they place the institution at risk for changes in payer mix and value-based purchasing adjustments. To protect the institution against these risks, the payment or credit per work RVU must be modified annually by the FPP to account for changes in payer mix and rates, RVU unit weight changes, and revisions to the professional/technical split. These factors result in a distinctive “piece work” mentality largely at odds with a focus on creating value and thinking of patients in a longitudinal rather than transactional mindset.

A physician’s work RVU performance compared to median levels is also commonly employed as the definition of full-time clinical effort. FPPs should provide alternative guidance on what is the “job” of an academic clinician in terms of service (sessions, templates, required documentation, and communications), general teaching and clinical administrative duties for the division or department, and share of call and coverage that, in sum, qualifies their salary.

As the clinical enterprise further expands, blends academic and community settings, and increasingly shifts to value-based payments and population health, broader metrics must be incorporated related to faculty performance, and new mechanisms must be established to fund departmental economies. Within the FFLC, there were examples of broader quality- and outcome-oriented metrics, as well as group or department performance as a component. Yet most participants are largely production-based, with department chairs managing the compensation system and metrics largely focused on production or collections values.

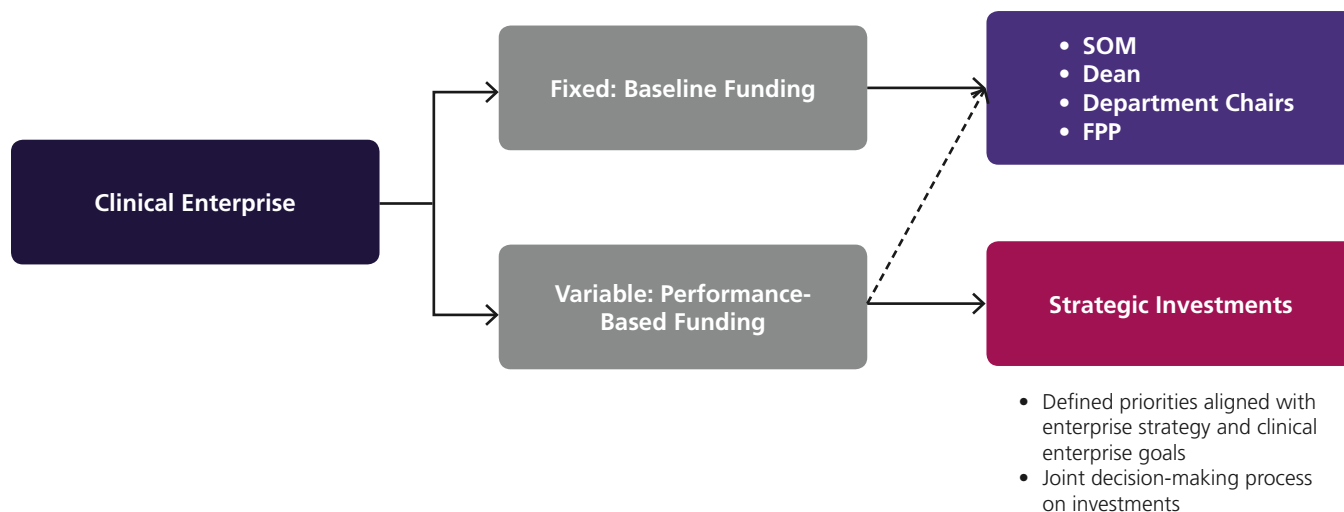
Little has been published on the impact of incentive models that incorporate value-based metrics. The Cleveland Clinic has recently reported on its redesigned compensation model for cardiology faculty as it moved away from a salary model based on seniority to one based on performance. It developed a scorecard of nearly 90 metrics with 38 focused on quality, with a set of metrics based on Centers for Medicare and Medicaid Services (CMS) core measures for heart care and 50 for nonclinical, academic, and other important aspects such as national leadership and publications. In the three years after implementation of the new model, overall performance increased, particularly for the bottom 10% of faculty. Also, metrics that were already within a satisfactory range continued to improve. For example, “door-to-balloon time,” which was already below the 90-minute benchmark, further decreased to 47 minutes.<sup>2</sup> The Mayo Clinic recently developed and evaluated a new compensation model for primary care physicians to achieve greater performance focused on value. The model measured physician satisfaction, financial impact, and outcomes. Considered a success, the pilot will be expanded to other departments and incorporate other aspects such as taking call and teaching residents.<sup>3</sup>

Within the research enterprise (particularly for basic science departments), most SOMs have yet to focus on incentive models that better align the faculty with securing research grants, covering salaries, and using resources (e.g., space and cores), in addition to other factors related to academic performance (e.g., publications and research significance). Measures for education performance can also be incorporated in establishing goals around the resident match, meeting and exceeding national testing standards, and trainee satisfaction scores.

#### **Academic Investment: Leveraging Clinical Enterprise Alignment in a Shared-Risk R&D Portfolio Model**

Academic investment can be considered within the context of the capacity, the levels of academic investments, their related enterprise strategy, and potential return on investment. Research investments in many cases should be considered R&D that enhances the clinical system. Decision making related to strategic investments therefore should focus on investment priorities and draw out the challenges and expectations. This model can be thought of as managing an R&D portfolio of investments and attracting and retaining the faculty necessary to fully achieve the potential of the institution (e.g., brand and reputation, clinical service enhancement, innovations, new sources of revenue including enhanced research funding; see Figure 6).





**Figure 6. Strategic R&D funding.**

The capacity for investing in research and education programs varies significantly among institutions based upon the operating results of their clinical systems. The range of R&D spending and the potential yield from research investments is a concept that leaders in academic medicine should consider as integral to their strategic planning. The question invariably arises as to how much a clinical system should invest in its faculty’s research programs.

R&D as a percentage of revenue varies considerably across industries. Pharmaceuticals and biotechnology lead the country in R&D investment, at close to 15% of revenues. Computer and electronic manufacturers, as well as medical device companies, approximate 8%.<sup>4</sup> In aggregate, health insurers and AHSs invest barely 0.1% of revenues in R&D (excluding quality improvement) and are among the industries with the lowest R&D spending (perhaps because most hospitals in the health care sector are nonacademic institutions).

AHSs are atypical of the overall health sector, however, and have typically invested significantly more in R&D, based on their fiscal capacity. Observed ranges include 4% (the highest observed among the participants in the FFLC) to 6% or more of net patient revenues (Manatt Health experience). These funds are most often used to recruit and support faculty — often distinguished faculty who enhance a center’s differential appeal to patients and insurers. In short, the answer to “how much to invest” can be answered by “as much as we can afford,” in this manner highlighting the need for effective leadership coordination and decision making across the enterprise.

Universities and health systems have been able to leverage research and discoveries through licensing revenues, commercialization, and patents. In a study of 195 institutions, this represented \$3B in 2016 licensing income, or an average of more than \$15M per institution.<sup>5</sup> In a separate study of 60 institutions, medical innovation represented over 75% of innovation activity.<sup>6</sup> Many of these discoveries have also led to advances in clinical care that support the clinical enterprise and enhance the AHS’s market position.

The ability for some AHSs to leverage return on investment from academic productivity or investment can be of significant secondary benefit to the primary value of creating an environment of innovation and discovery. This environment has many downstream benefits that are both tangible and intangible, including the ability to maintain and foster a vibrant faculty as well as enhance the value of the AHS’s brand and ability to attract patients and philanthropy.

### **Clinical Program Investment and Support**

Clinical program investment focuses on effective clinical recruitment outside of needed physical capacity and technology. This requires the close coordination of the health system, the department, the FPP, and the SOM. At times, however, lack of coordination and poorly managed expectations result in burdensome financial arrangements for some components of the enterprise. To mitigate these effects, and reduce the risks of unmanaged recruitments, institutions have begun to modify their approaches. The experiences of the FFLC have yielded fruitful guidelines for both clinical recruitment and program support.

#### ***Clinical Recruitment***

The priorities and budgets for clinical recruitment should closely align with an AHS's strategic plan. Recruitment should include a well-defined process for submitting requests for recruitment that demonstrate such alignment, and articulate funding sources and requirements that can be advanced to the enterprise level. The enterprise should commit to at least a three-year period of limited support in launch funding, tied to the clinical and academic business plan. Defining potential ongoing support requirements up front with the anticipated funding source will clarify and streamline processes. Investment should be beneficial to, support the missions of, and be funded jointly by the health system, SOM, and FPP. After a launch funding period, downside risk-sharing should be implemented with the department and faculty member. Finally, leadership should consider creation of a major new program fund or budget process with business plans submitted, prioritized, and funded based on joint approval by the hospital, SOM, and FPP.

#### ***Program Support***

In principle departments should be able to operate at specialty norms for productivity and infrastructure at a break-even level or better for the clinical P&L. Departments that do not function at these levels should be placed in an FPP "receivership" for turnaround. Deficit program support can be established based on a set of transparent principles and rule requiring a P&L review and agreement on necessity of the service. Program support can be requested for a specific location or service where there are losses (i.e., not be penalized for making money in another location). Program support agreements should be time-defined (e.g., 2–3 years), with specified increases for salaries and other expenses, and they should incorporate shared risk for the involved department(s). Departments seeking to reduce or eliminate services due to financial pressures should obtain prior approval from the appropriate hospital and FPP leadership.

Finally, policy changes should be considered that would maximize the investment potential of departmental reserve funds as institutional resources for use in strategic program support, with matching funds or other contributions from the hospital or FPP reserves for multidisciplinary or service line programs. From a financial perspective, reserves may also be considered as a type of working capital, appropriate for use in supporting start-up commitments to faculty and an expected level of annual investment in the department. However, in many instances departmental reserves are sequestered as a kind of quasi-endowment, or "rainy day fund." In some institutions, policies specifying minimum and maximum departmental reserves levels facilitate collaborative decision making regarding resource allocation. Fewer than a minimum of 10 days of departmental expense reserve policy may be established as the triggering mechanism for FPP receivership action. Reserves in excess of 90 days of expense may have a three-year spend-down requirement or the ability of the dean's office or FPP to sweep a portion of these reserves. However, one should guard against introducing a disincentive to departmental entrepreneurial interests, and such policies need to be very carefully introduced.

## FACULTY COMPENSATION COMPONENTS

### Faculty Compensation

Faculty compensation models are integral to realizing faculty potential and aligning their efforts with the enterprise strategic goals. Faculty compensation should be considered part of a global funds flow strategy, and the need for careful review of legacy compensation and incentive models is acute. Unintended consequences of first-generation funds flow models are evident and must be remedied. For instance, at some institutions clinical faculty optimize incentive compensation triggered by work RVU production by increasing the use of advanced practice providers and favoring return over new visits. Payer mixes at many AHSs are skewing toward governmental rather than commercial payers, which are “all the same” in a work RVU model but certainly not in terms of the clinical margins needed to sustain the academic mission. At the same time, new physician compensation packages largely based on benchmark levels per work RVU inherently lift physician compensation relative to professional collections.<sup>7</sup> However, the majority of faculty do not practice at the higher levels of productivity required to earn incentive payments and therefore expect higher guaranteed compensation. Taken to the extreme, these factors may create a dichotomy of private-practice-oriented faculty and traditional ladder-track faculty, undermining academic harmony. Incentive compensation systems may also reinforce departmental silos of revenue credit, undermine multidisciplinary care programs, and use the AHS’s strategic needs to support unproductive or unprofitable services. Finally, population-based health systems are beginning to emphasize early patient care to avoid late-term complications. Systems will need to carefully construct compensation models to create incentives for early intervention as well as a measured, high-quality referral for advanced procedures as we move from direct fee for services.

Academic faculty receive a base salary and benefits premium over private-practice physicians, even though their total compensation may be lower. In addition, due to competition in faculty recruiting, the AHS makes investments to support the physician’s ability to practice at the top of his or her license or to support research interests, or both. Work RVU targets may be reduced to permit academic and administrative time, but the AHS must also consider what defines a full work week (e.g., 40 or 50 hours). Systems also should take into account practice variability within a specialty that can promote more standardized care vs work RVU production, as in the case of a gastroenterologist who focuses on consultative care, not procedures. Additionally, clinical faculty may not be fully informed that eventually they will need to cover most of their direct and indirect costs with professional revenue and grant funding. Similarly, research faculty in the clinical departments may not fully realize that their protected time is actually AHS investment time, and they will have to generate covering grant income or commit to more clinical effort.

As these factors may vary by department, it is essential that the FPP establish base salary compensation requirements in the context of minimum clinical service expectations and work RVU productivity to qualify a faculty member’s base salary, benefits, and malpractice coverage premium. Chairs of basic science and other departments conducting research must similarly qualify expectations for allocations of lab space and other resources.

Incentive compensation policies and formulas also should apply across the FPP, with work RVU expectation variations by specialty. In private practice, 50% of compensation may be incentivized (e.g., collections-based). Given the above faculty base compensation and benefit guarantees, the ideal plan would have an incentive compensation potential of 15% to 20% of total compensation in order for the incentive system to have a meaningful impact on physician performance. This range ensures that a threshold level of performance is required to earn a payout and that the maximum payout potential mitigates unintended outlier performance. An incentive plan that has less than a 15% payout potential may not engage the faculty in FPP and hospital desired goals and outcomes.

Few AHSs have this ratio of base to incentive compensation and cannot afford to substantially increase the total incentive compensation pool, nor could they reduce salaries to the desired ratio without faculty revolt. Most AHSs provide an annual inflation salary adjustment of 2% to 3%. One means of introducing incentives would be to freeze salaries for three years and

begin paying out higher incentives. If production-oriented or personal-metric-based incentives are paid quarterly and AHS-level incentives are paid annually, the risks of changing the compensation system may be mitigated.

The work RVU weighting in the incentive plan should be at least 50%, but not exceed 75%, to avoid production at the expense of other faculty or academic responsibilities. Incentives should also include team-based metrics when possible. The balance of incentive plan weighting for clinician incentives should be based upon system-level, controllable, and measurable FPP and hospital goals that support collaboration and providing excellent care (e.g., increases in new patients, reducing serious safety events, success in the resident match, and documentation policy compliance rates). For research faculty, an incentive payment may be applied for SOM-wide improvements in the unfunded research ratio and increases in NIH funding.

### **Compensated Services**

Compensated services consume up to two-thirds of funds flows; they represent direct payments from the clinical enterprise for essential services including medical direction, physician coverage, and GME program support.

At many institutions these services are negotiated annually between the hospital and each department (in many cases on a faculty line-item basis), contributing to the significant complexity in these arrangements. Furthermore, approaches in which the prevailing method is a percentage of salary tend to dilute clinical effort and introduce perverse incentives for maintaining services rather than rethinking which services are truly required. All administrative services should be valued on the basis of one median physician salary level and the associated administrative responsibilities described in the position description.

#### ***New Model Approaches: Compensated Services***

The new model approaches convert many of these line-item negotiated agreements to a simplified, centrally managed agreement that specifies requirements (e.g., for medical direction) and reimburses on the basis of a unit cost rather than a percentage of salary. The following are illustrative examples:

##### Medical directorships

- Defined roles, levels, and titles with detailed position descriptions and annual performance reviews.
- Compensation based on a set amount for portion of time. Level of payment is based on a standard expectation of administrative effort, not the opportunity cost of other specialty-based clinical effort.

##### Medical education

- Total budget-based approach that identifies and manages the funding sources from direct GME government funds and the health system, as well as the expense components. This can form the basis for understanding the total investment and level of support from the health system for program administration.
- GME faculty supervision, wherein teaching is as part of clinical faculty base salary compensation as a general responsibility of being part of an academic clinical enterprise. The funding should go to the department.
- GME program administration provides funding for the required positions per Accreditation Council for Graduate Medical Education (ACGME) standards. For program directors, tier the dollar equivalent funding based on the number of trainees and fund trainees with a standard value for a director time on a standard cost basis. See Appendix B: Guidelines for Compensated Services: Residency Program Support for further information.

##### Purchased clinical services

- Per-session outpatient clinic rate based on confirmed presence, if professional billings are insufficient or billed by the hospital, and fixed dollar stipends for lab, diagnostic, or treatment service medical direction

- Hospitalists and intensivists paid on a per-week rate with differentials for nights and weekends with work RVU, length of stay, and other quality incentives
- Adherence to clinical overhead formulas based on standard staffing and resource use as set by the FPP; standard advanced practice provider cost allocations with any revenue or work RVU credit application

One merit of moving to a managed agreement in aggregate for these types of services is that it requires the department chairs to work together to define how they will provide services most efficiently, thus supporting the broad movement to group norms.

## Chapter 4

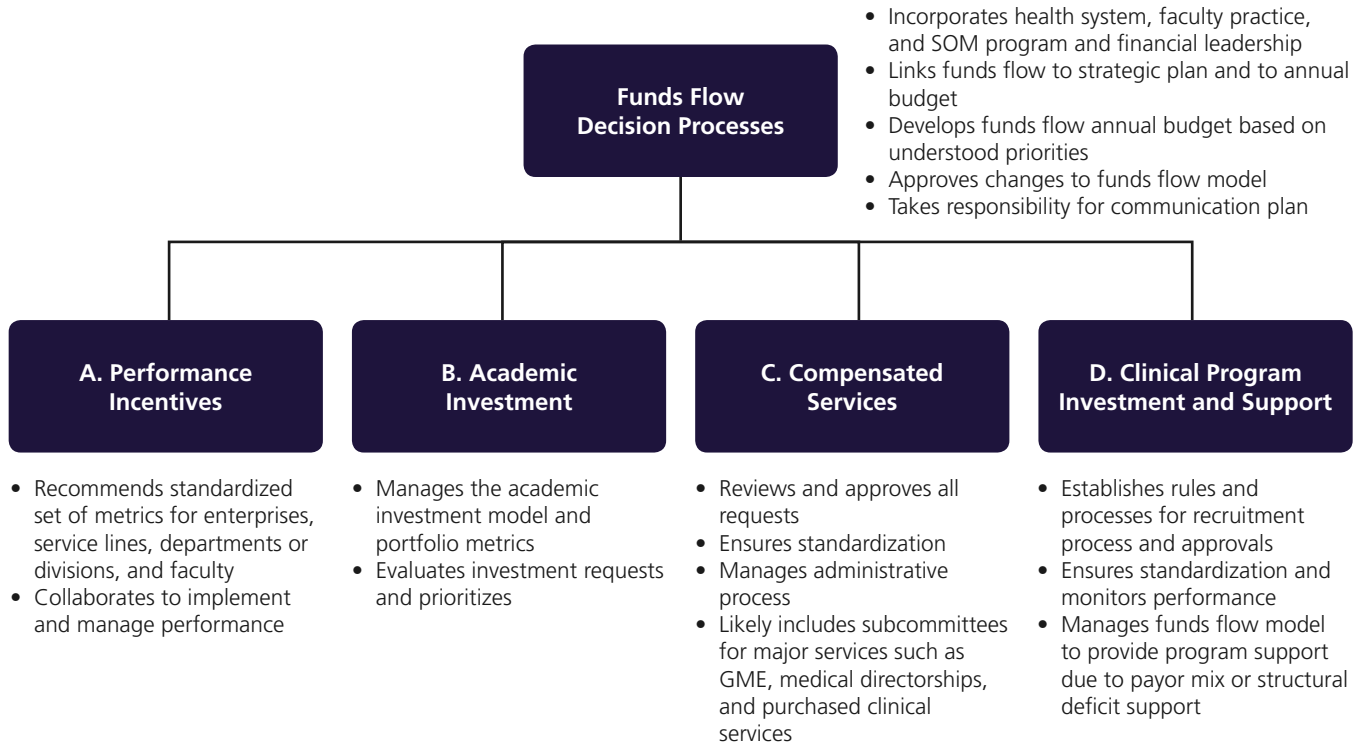
# Collaborative Decision Making and Governance

Equally important as the technical structure of funds flow decisions is the care and attention that must be given to the structure for managing funds flow processes. This need holds true whether or not the enterprise is corporately or organizationally integrated. The essence of the AHS is the deep integration of the missions, and therefore the respective balance among these missions must be in harmony, appropriately resourced, and collaboratively developed. The guidelines in Table 3 should be considered in assessing the institution’s capacity for effective collaborative decision making relative to fiduciary oversight of funds flow.

**Table 3. Guidelines for Assessing Institutional Capacity for Funds Flow Decision Making**

Guideline	Description
Develop an enterprise-wide strategic plan and align resources to maximize the capacity to invest	<ul style="list-style-type: none"> <li>• Commitments based on enterprise-wide strategies for growth and success across all missions</li> <li>• Enterprise-based view of “our money” vs “my money”</li> <li>• Incorporation of a defined model for academic investment that sustains a level of growth based on fiscal capacity while encouraging shared risk and reward</li> <li>• Aligned investment between clinical and research priorities to optimize the “learning health system” potential of the enterprise</li> <li>• Strategically defined clinical, education, and research goals</li> </ul>
Structure governance to bring together clinical and academic leadership for collaborative decision making	<ul style="list-style-type: none"> <li>• Senior leaders at the table together make resource allocations based on a set of rules to drive most decisions</li> <li>• Minimized individual “deal-making” at the faculty and department level in preference for consistent application of principles</li> <li>• Drivers of clinical performance that are continuously assessed and worked on, with a focus on continuous improvement in service lines, cross-departmental integration, reduced duplication, and enhanced system growth</li> <li>• Drivers of research and education excellence that are measured, reviewed, and assessed to determine if strategic goals are being met for dollars invested</li> <li>• Incentives for individual, group, and enterprise results across key metrics, including financial performance, clinical productivity, quality, operational efficiency, and patient engagement</li> <li>• Broad understanding and disclosure among the leadership and participants of how the funds flow works</li> </ul>

Well-functioning funds flow decision making and administrative management processes will facilitate good communications and transparency among the constituent components of the enterprise. Funds flow processes — and the committees that facilitate them — should address the multiple dimensions described in this report, as illustrated in Figure 7.



**Figure 7. Governance and collaborative decision making.**

During periods of significant development, committees should meet frequently. Once established, these groups could be convened on an ad hoc or periodic basis (e.g., every two years).

# Chapter 5

## Evolving Funds Flow Models: Summary and Lessons Learned

Table 4 summarizes the key attributes of the components of next-generation funds flow models that highlight lessons learned from the FFLC.

**Table 4. Key Attributes of Funds Flow Model Components**

Characteristics	Key Attributes	Collaborative Best Practice Examples
<b>Enterprise-Wide Commitments</b>	<ul style="list-style-type: none"> <li>• Enterprise-wide strategic plan</li> <li>• Alignment of funds flow to fiscal capacity</li> <li>• Linked and/or global budgeting with shared risk/reward</li> </ul>	<ul style="list-style-type: none"> <li>• Penn State Health, Penn Medicine, UAB Medicine, UT Southwestern Medical Center, Nebraska Medicine</li> <li>• All are integrated, with a focus on enterprise-wide planning and with a shared risk/reward model in place to align funds flow</li> </ul>
<b>Funds Flow Governance</b>	<ul style="list-style-type: none"> <li>• Formalized structure for all components</li> <li>• Inclusion of clinical and academic leadership for collaborative decision making</li> <li>• Led by leaders who believe in the value of academic investment, understand the economics and levers, and support all three missions</li> </ul>	<ul style="list-style-type: none"> <li>• Penn Medicine: Funds flow process integrated into business practices</li> <li>• UAB Medicine: Strong, multicommittee structure</li> <li>• Yale New Haven Health: Shared services committee structure (with their medical school)</li> </ul>
<b>Strategic Components</b>		
<b>A. Performance Incentives</b>	<ul style="list-style-type: none"> <li>• Alignment of clinical service lines growth and development for investment, network development, growth/margin, and quality</li> <li>• Alignment of performance across related sites and types of services from inpatient to outpatient</li> <li>• Alignment with the departments and divisions that source for care and patients to collaborate</li> <li>• Provision of a structure to compensate for under-reimbursed professional services</li> </ul>	<ul style="list-style-type: none"> <li>• Penn State Health: Gain-sharing model that includes clinical departments</li> <li>• Penn Medicine: Well established enterprise and entity incentive model with innovative approach to cancer service line incentives</li> <li>• UAB Medicine: Clinical enterprise management model with broad metric-based performance incentives from enterprise to faculty; focused currently on service line model</li> <li>• UT Southwestern Medical Center: Making significant performance management systems investments to measure P&amp;L by mission, with broad individual and group performance metrics and incentives. Several MOUs in place to align service lines with cross-department disciplines</li> <li>• Yale New Haven Health: Agreement for department incentives for multiple metrics and goals (with their hospital and medical school)</li> </ul>
<b>B. Academic Investment</b>	<ul style="list-style-type: none"> <li>• Defined funding model aligned with fiscal capacity</li> <li>• Governance process to prioritize and monitor investments</li> <li>• Aligned with AHS and clinical enterprise potential returns</li> </ul>	<ul style="list-style-type: none"> <li>• Nebraska Medicine: Separately governed innovation fund for growth</li> <li>• Penn State Health: Defined investment model aligned to fiscal capacity</li> <li>• UAB Medicine: Academic enrichment fund based on hospital operating income</li> </ul>

*Continued*



Table 4 Continued

Characteristics	Key Attributes	Collaborative Best Practice Examples
<p><b>C. Clinical Program Investment and Support</b></p>	<p><b>Program investment:</b></p> <ul style="list-style-type: none"> <li>• Integrated recruitment plan aligned to strategic plan</li> <li>• Time-defined investments based on business plan with standardized metrics</li> <li>• Funding from health system and SOM</li> </ul> <p><b>Program support:</b></p> <ul style="list-style-type: none"> <li>• Productivity and efficiency driven with defined process for “turnaround” support</li> <li>• Deficit program support model with formal reviews and ability to leverage collective funding reserves across departments</li> <li>• Integration of indigent care into regular care channels</li> </ul>	<ul style="list-style-type: none"> <li>• Penn Medicine: Well-defined enterprise recruitment process that balances “micro market” needs with enterprise initiatives</li> <li>• USF Health/Tampa General Hospital: Standardized Recruitment Support Agreements and process</li> <li>• UTSW: Defined process with requirements, funding sources, and departments responsible for portion of funding</li> <li>• Yale New Haven Health: Formal clinical recruitment plans that are annually reviewed</li> </ul>
<p><b>Faculty Compensation Components</b></p>		
<p><b>A. Faculty Compensation</b></p>	<ul style="list-style-type: none"> <li>• Base plus incentive component (10–20%)</li> <li>• Ability to measure contribution by mission</li> <li>• Clinical component that is 50–75% production-based with metrics for team and department performance as well as broader metrics aligned with population health and value-based care</li> <li>• Research component that is based on minimum coverage expectations with incentive for funding and related metrics such academic contribution and use of space</li> </ul>	<ul style="list-style-type: none"> <li>• Nebraska Medicine: Faculty work RVU production plus finance, quality, engagement, and individual goals</li> <li>• UAB Medicine: History of faculty production focus with broad department incentive that is now being applied to individual faculty incentive model</li> <li>• UTSW: Individual productivity and group performance metrics including work RVUs, new patients, patient satisfaction, and others</li> </ul>
<p><b>B. Compensated Services</b></p>	<ul style="list-style-type: none"> <li>• Omnibus agreement model for improved governance and collaboration among chairs</li> </ul> <p><b>Medical directorships:</b></p> <ul style="list-style-type: none"> <li>• Defined roles, performance expectations, and fixed compensation based on time</li> </ul> <p><b>Medical education:</b></p> <ul style="list-style-type: none"> <li>• Budget-based approach with defined program administration minimum and scaled support model based on number of residents</li> </ul> <p><b>Purchased clinical services:</b></p> <ul style="list-style-type: none"> <li>• Clearly defined and agreement based</li> <li>• Based on session rates for outpatient clinics and productivity and other metrics for services like hospitalists</li> <li>• Overhead allocation that is based on standardized amounts with advanced practice providers support allocated to account for revenue/production</li> </ul>	<ul style="list-style-type: none"> <li>• UAB Medicine: Standardized for all services with formal process for financial support</li> <li>• USF Health/Tampa General Hospital: Well documented in one agreement and process with defined compensation approach for services</li> </ul>

There are inherent risks in changing established funds flow and compensated service systems. It would not be an exaggeration to characterize funds flow as the “Gordian knot” of academic medicine. Some of the following change management techniques have been used with good effect:

- Do not introduce a funds flow system change as part of a budget reduction effort. It is more likely to be resisted by the faculty and discounted as a cost-cutting measure.
- Offer to hold the affected parties harmless for the first year and offer substantial (50%, for instance) financial mitigation (up and down) for the second year.
- Begin with commitments at the health system, SOM, and FPP level to reinforce central policy and financial control but make these contingent on adopting common faculty incentive compensation goals or another shared driver of performance.
- Address compensated service standard formula introduction sequentially in six-month intervals to permit financial and reporting systems to adopt to a new approach.
- Vest authority for implementation with designated senior executives and close all back doors to exceptional consideration.
- Communicate with departmental chairs, faculty, and administrative leadership regarding these changes and report on their impact.



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## Chapter 6

# Implications and Recommendations for Funding Research

For most AHSs, the ability to invest in productive research, create new knowledge, and advance standards of care will define leadership success or failure. In the past, the primary source of new investment was the clinical margin. However, as this report seeks to illustrate, the changes being introduced into next-generation funds flow models are likely to significantly change the manner in which investment decisions in research programs are made. Collaborative decision making between health systems and SOMs, even in fully integrated AHSs, is likely to favor investments in clinical and translational research as their R&D investment and the recruitment of research faculty with strong interest in clinical applications. This trend is consistent with the shift in funding by pharmaceutical companies to later-stage clinical trials over discovery research: health system as well as pharmaceutical executives seek an increase in services and products as a result of their investment.<sup>4</sup> Health system leaders worry that with threats to the clinical margin, each investment decision is of significant consequence.

AHS leaders therefore tend to favor supporting the recruitment of faculty whose research interests are likely to differentiate an institution's signature programs. These faculty will typically have their appointment within a clinical rather than a basic science department. Funding for clinical research and basic science investment is likely to become even more challenging if (as is expected) clinical margins decline significantly in the years ahead. Medical schools and their parent or affiliated universities should anticipate this trend and diversify their funding sources; Figure 8 illustrates examples.

Questions that institutional leaders should consider include:

- **Should we maintain, grow, or shrink our basic sciences?** Institutions with limited financial capacity will need to carefully consider the size of their basic science faculty and the extent to which they are able to maintain presence in multiple areas.
- **What are our opportunities for industry funding, and what barriers do we need to address?** In an era of federal budget deficits, it is inevitable that private-sector funding will become even more critical to research; even now, industry accounts for more than 55% of basic research funding. The long lead times associated with basic research, however, mitigate against the private sector being an adequate source for the funding of basic discovery research.
- **Can we “rev up” philanthropy and foundation relationships?** The private sector — foundations, individuals, charities, industry — is serving an increasingly important role in the funding of “high-risk” initiatives less likely to receive funding from the NIH. Foundation and charity funding is estimated at \$4.2 billion of the \$116.5 billion annual research funding, with over 87% provided by the Howard Hughes Medical Institute and the Bill & Melinda Gates Foundation.<sup>4</sup> New philanthropists are entering the scene, however, with mega-investments that create the promise of a new era of unfettered investigation. Recent mega-initiatives include the Chan Zuckerberg Initiative, the UCSF–Helen Diller Comprehensive Cancer Center, the OHSU Knight Cancer Institute, and the Parker Institute for Cancer Immunotherapy, among others. This type of investment, however, comes with numerous requirements and potential conflicts, requiring careful navigation through terrain that is unfamiliar to many institutions.<sup>8</sup>

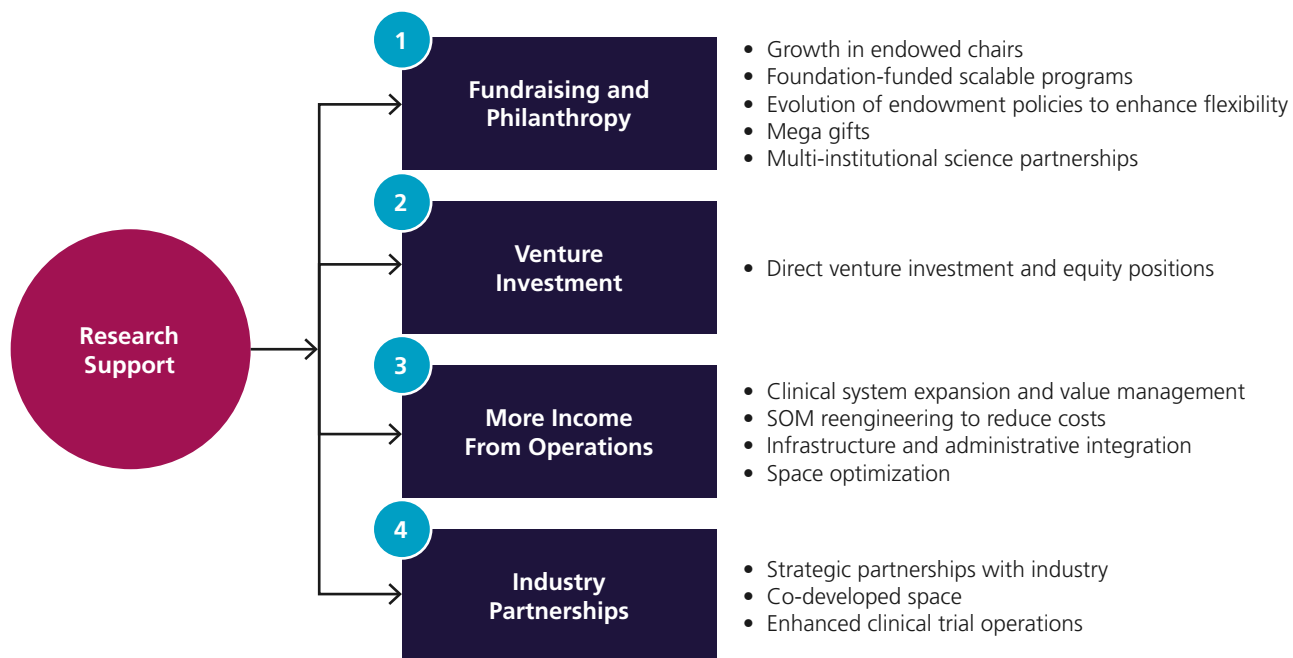


Figure 8. Sources of research support.

- **Should we increase our venture portfolio?** AHSs have long sought to monetize intellectual property through licenses and patents, and this is a modest source of income for most (and a very significant source for few). In recent years, universities and hospitals have been far more active in licensing and supporting start-ups with ideas born from their labs and clinical research programs.<sup>5</sup>
- **What are long-term alternatives to conventional funds flow?** Financing the next generation of funding for basic science will require even more creativity. Convincing state legislatures to fund discovery research is one approach. Biomedical research bonds are another concept, with early-stage investments recouped through late-stage applications. In 2016 voters in Montana considered, and ultimately defeated, a bill to provide \$20 million per year to fund a Montana Biomedical Research Authority with a focus on brain diseases.

In addition to considering these questions, the academic leadership at AHSs can implement organizational means to more tightly integrate basic science investigators with their clinical colleagues. In this manner, the synergy potential associated with integrating basic science, clinical research, and clinical service will become increasingly actualized.

Applying the principles and recommendations included herein can potentiate alignment to further focus the AHS on delivering greater value and driving the innovation that has differentiated AHSs. This value will in turn ensure the vitality of the academic missions, including the ability to train the next generation of clinicians and scientists and to address the health needs of the diverse communities each AHS serves.

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## Appendix A

# Legal Considerations

DISCLAIMER: Nothing in this report should be considered legal advice; readers should consult their counsel regarding implementation of incentive and margin-sharing arrangements.

Next-generation funds flow models require the careful consideration of the restrictions imposed by the federal Stark Law and the Anti-Kickback Statute, as well by state-level fraud and abuse laws. The FFLC explored the rules, exceptions, and safe harbors that could permit implementation of innovative models from a federal perspective.

### BASIC TENETS OF THE STARK LAW AND ANTI-KICKBACK STATUTE

**Stark Law:** Prohibits a physician from referring Medicare patients for certain “designated health services” to an entity with which the physician has a financial relationship (and does not require intent). The Stark Law does have a number of exceptions, one of which is discussed below.

**Anti-Kickback Statute:** Prohibits offering, paying, soliciting, or receiving anything of value to induce or reward referrals or generate federal health care program business with intent. This statute does have a number of regulatory safe harbors.

### THE “ACADEMIC MEDICAL CENTER EXCEPTION”

After the Stark Law was passed, Congress established a separate exception for physician payments to medical school faculty and FPPs known as the “academic medical center exception.”<sup>9</sup>

Below are the main tenets:

- Referring physicians must be licensed to practice medicine in the state, be an employee of one of the academic medical center components (as defined in statute), have a faculty appointment at the medical school or at an educational program at the hospital, and provide substantial academic or clinical teaching services.
- Total compensation paid to the physician by all components is set in advance, does not exceed fair market value, and does not take volume or value of referrals into account.
- All transfers between components must support missions of teaching, indigent care, research, or community service.
- Relationship of components must be established by written agreement or other written document adopted by the governing body of each component. If the academic medical center is a single legal entity, the requirement is satisfied if transfers of funds between components are reflected in routine financial reports.
- Research payments must actually support research.
- Arrangement must not violate the Anti-Kickback Statute (i.e., no intent to induce referrals).

Legal guardrails for funds flow have to be evaluated within the context of the academic medical center exception. In 2008, in *United States ex rel. Villafane v Solinger*,<sup>10</sup> a physician challenged a funds flow arrangement at an academic medical center between a medical school, a children’s hospital, and several private physicians with medical school appointments. The court found that the arrangement fell within the academic medical center exception and found no violation of the Anti-Kickback Statute, given that the payments supported the missions of teaching, indigent care, research, or community service and did not

exceed the fair market value of the services provided. It further stated that the academic medical center exception is “flexible, purpose oriented, and not hyper-technical”<sup>10</sup> and emphasized the substance of relationships over the manner of documentation.

## LEGAL GUARDRAILS FOR INCENTIVE MODELS

One of the most challenging areas for funds flow relates to incentive models. AHSs have implemented incentive models that support productivity and other benchmarks for physicians, and many have developed enterprise-wide or entity-level incentives related to margin and growth. Increasingly, AHSs are incorporating into their physician and entity-based incentives broader performance metrics that relate to quality and value. In some cases, AHSs have implemented models that relate to specific departments or service lines.

Because they involve payments to physicians who are in a position to make referrals to the AHS, these types of arrangements pose risks under the Anti-Kickback Statute and the Stark Law. Current laws have not kept up with the changes in health care related to these types of models, and organizations are left to judge or interpret the potential risks, and determine whether Anti-Kickback Statute safe harbors or Stark Law exceptions (particularly the AHS exception) apply. In general, however, the more integrated the AHS from a governance standpoint, the lower the potential risk. Likewise, the more that enterprise incentive models relate at the enterprise level, the lower the potential risk. Ultimately, organizations are left to manage in shades of gray. Recently the government has requested information from the public regarding potential changes to the Stark Law. Any new engagement should have careful legal oversight.

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## Appendix B

# Guidelines for Compensated Services

### MEDICAL DIRECTORSHIP FINANCIAL SUPPORT

#### Case for Modification

Most AHSs support their medical directors on a percentage-of-salary basis. The level of salary support is typically based on who occupies the position, rather than a delineation of expected duties, performance requirements, and associated compensation. On a percentage-of-salary basis, the compensation for faculty performing medical directorship duties can range from \$150,000 to \$700,000, based on specialty. Despite this broad range, the administrative work required for a medical directorship does not vary significantly by specialty. Furthermore, the recognition of administrative work on a percentage-of-salary basis may have the unintended consequence of reducing a faculty member's expected clinical full-time equivalent (FTE) effort, expected productivity, and share of call.

#### Observations

A number of institutions have transitioned to per-unit arrangements rather than percentage-of-salary arrangements for medical directorships, thus simplifying and strengthening their overall administrative process.

#### Sample Approach for Transitioning to a Per-Unit Basis for Compensated Medical Directorships

1. Set compensation basis, either by blending all current salaries supported to provide overall budget neutrality or by using an administrative pay median, suited to the institution's particular market, for an employed physician in an administrative leadership role in the hospital.
2. Add benefit factor cost and budget for any standard assessments outside of this calculation, but exclude malpractice cost and any incentive compensation, as they are not related to the administrative effort (e.g.,  $\$300,000 \times 1.25$  benefit factor = \$375,000).
3. Set a range of physician effort for administrative roles on a percentage basis (for instance, in 5% increments) to develop the stipends and to help establish a consistent support policy (e. g., 10–50%).
4. Calculate fixed dollar support levels (e.g., 15% effort  $\times$  \$375,000 = \$56,250 fixed dollar stipend). Do not reference percentage of effort in illustrating this approach. Round calculated support levels for administrative ease.
5. Review list of current medical directorships support. If any salaries are high because they incorporate an element of program support or launch funding, separate these dollars for alternative direct program funding.
6. Apply the calculations outlined in #4 (above), to provide the AHS with up to nine levels of fixed dollar support. To select the support level for a medical director position, the AHS must establish standards based on a medical director's degree of physician and staff supervision, principal investigator responsibilities, size and complexity of the clinical service, regulatory compliance duties, financial and budget responsibilities, patient experience responsibilities, and program development responsibilities in order to apply an administrative position weighting system consistently. If other responsibilities are applicable in the AHS environment, add these to the calculation — but the total weighting must sum to 100%.



7. Apply the standard weight to a position consideration by defining metrics for each responsibility category to evaluate positions consistently (i.e., for financial and budget responsibilities, a low score would be assigned to a medical director who just reviews financial reports and the highest score to a position that has substantial P&L responsibility).
8. Use this approach, if it would be found useful, in annual medical director performance reviews and evaluating adjustments to medical director support.

## RESIDENCY PROGRAM SUPPORT

### Case for Modification

At many AHSs, the residents are employed by the hospital, which covers salary, benefits, malpractice insurance, and some miscellaneous expenses that are considered direct graduate medical education expenses. There is often sponsor support for a residency director and residency coordinator (as a calculated FTE level of support based on the number of residents in the program). This approach may have the effect of concentrating support among a few faculty members and may not provide support for fellowship directors or account for “over the cap” trainees. In addition, other resident training expenses may be charged to the program sponsor as they are incurred.

### Observations

To spread more support to faculty involved in postgraduate training, provide support for residencies and fellowships, and simplify budgeting and payment processing for other training program expenses, some AHSs are moving toward the allocation of support on a per-trainee basis (for those under the cap) and partial FPP employment for fellows over the cap.

### Sample Approaches for Transition to a Per-Unit Basis for Residency Program Support and Enhancing Designated Institutional Official (DIO) Authority

1. For different sizes of training programs, a base minimum could be considered based on ACGME requirements for base-level training program support.
  - Programs with over 50 trainees (including residents and fellowships): Maximum level of support for a residency director set at a fixed dollar FPP average equivalent to 50% of salary with a 1.0 FTE residency coordinator.
  - Programs with 10–49 trainees (including residents and fellowships): Maximum level of support for a residency director set at a fixed dollar FPP average equivalent to 25% of salary with a 0.5 FTE residency coordinator.
  - Programs with fewer than 10 trainees (including residents and fellowships): Maximum level of support for a residency director set at a fixed dollar FPP average equivalent to 15% of salary with a 0.25 FTE residency coordinator.
  - Below is an example from Penn Medicine that is more stratified for smaller training programs with a maximum of 20% time allocation.

#### Penn Medicine Clinical and Departmental Funding

Number of Trainees	Program Director Time Allocation
0–5	0%
6–10	5%
11–15	10%
16–20	15%
>20	20%

2. The hospital and any SOM departments that fund or support these training program expenses may combine their expenditures for current resident training, including miscellaneous costs, deduct #1 base support, and then divide the remainder by the number of trainees. They would allocate funding to the departments on a per-trainee basis. This may provide the AHSs with a more consistent and fair allocation method.
3. A successful resident match is often highly correlated with the skills and commitment of a residency director. Therefore, it is preferable that the institution's residency directors report primarily to the DIO, who would have authority over the department's internal allocation of support and all residency director and assistant residency director appointments. The DIO should report to the dean and hospital president, and the DIO office should be mutually supported by the hospital and school in proportion to the residency and clerkship responsibilities.

## INPATIENT SERVICE SUPPORT

### Case for Modification

Full-time intensivists and hospitalists usually do not have patient panels or significant outpatient care responsibilities. Their clinical schedules are characterized by long days, weekly assignments, and extended day/weekend assignments. Due to this intensity of effort, they may be on service for only 26 seven-day weeks per year. While characterizing their efforts as “shift work” would be demeaning, the term does define their clinical schedule and level of clinical FTE effort.

As a result of their attending responsibilities, these faculty generate professional inpatient reimbursement, which can be substantial for the intensivists. However, compensated service support is often based on a percentage of salary without clear recognition of professional collection responsibilities. Nor does this approach tie to actual service effort on the inpatient units.

### Observations

Some AHSs have moved toward support payments on a per-week basis with imbedded differentials for nights and weekends. Further, they have implemented incentives to reward faculty for superior performance in professional collections, hospital quality metrics, and documentation compliance. In addition, they have separated the support provided to a unit medical director between weekly service and administrative roles, and require the unit medical director and any participating attending to perform a minimum level of inpatient attending weeks per year.

### Sample Approach for Transitioning to a Per-Week Basis for Inpatient Attending Support

1. Review intensive care unit (ICU) and acute care unit medical director position descriptions and reset support for the administrative responsibilities (usually substantially higher for an ICU medical director).
2. Determine the number of attending physicians who must be supported based on medicine/surgery or ICU beds covered per attending, and firm specialty or unit-based attending bed scope for acute care units.
3. Set policy for FTEs in weeks of service responsibility with expectations for sharing night and weekend service. Establish a minimum number of weeks of duty per year for attending physicians to maintain proficiency and enhance patient flow.
4. Work with the FPP to determine the expected professional collection yield by service and basis for any incentive compensation.

5. Sum all existing inpatient attending support, less revised medical director support, and divide by number of weeks of service required. Adjust or rebalance based upon expected collections yield and ICU versus acute care unit service intensity and set seven-day weekly rates. Pay the same rate for a unit regardless of the specialty or department origin of the attending.
6. Monitor actual schedules and on a quarterly basis reconcile payments accordingly. Review professional collection yields annually, and to reset weekly support rates, address any bed or service reallocations that occurred during the year.

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## References

1. Arizona Board of Regents. Special Board Meeting, January 18, 2015. Merger of the University of Arizona Health Network and its Affiliates into Banner Health or its Wholly Owned Subsidiaries. <https://public.azregents.edu/Shared%20Documents/2015-01-28-Special-Final-Board-Book.pdf>. Accessed September 4, 2018. Although the University of Arizona did not participate in the Funds Flow Learning Collaborative, it provides an excellent example of enterprise commitments.
2. Fellows J. Reevaluating Cardiology RVUs. *Health Leaders*. 2015;July/August:66-70.
3. Lenhart J, Horecki RJ, Kowal GK, Simpson HJ, Deyo-Svendsen ME, Floren AE. Compensation for primary care physicians at Mayo Clinic Health System. *Healthcare Financial Management Association*. July 5, 2017. <http://www.hfma.org/Content.aspx?id=54789>.
4. Moses H, Matheson DHM, Cairns-Smith S, George BP, Palisch C, Dorsey ER. The anatomy of medical research: US and international comparisons. *JAMA*. 2015;313(2):174-189.
5. Association of University Technology Managers (AUTM). FY2016: AUTM U.S. Licensing Activity Survey. A Survey Report of Technology Licensing and Related Activity for U.S. Academic and Nonprofit Institutions and Technology Investment Firms, 2016. [www.autm.net/AUTMMain/media/SurveyReportsPDF/AUTM\\_FY2016\\_US\\_Highlights\\_no\\_Appendix\\_WEB.pdf](http://www.autm.net/AUTMMain/media/SurveyReportsPDF/AUTM_FY2016_US_Highlights_no_Appendix_WEB.pdf). Accessed May 16, 2018.
6. Medical Innovation Playbook. 2012. [www.medicalinnovationplaybook.com/](http://www.medicalinnovationplaybook.com/). Accessed May 16, 2018.
7. Woffard D, Libby D. How to avoid “death by benchmarking”: A more thoughtful approach to wRVUs may make for a more sustainable compensation plan. *HFM Magazine*. August 2015. [http://s3.amazonaws.com/ecgmc.com/images/How-to-Avoid-Death-by-Benchmarking\\_August-2015.pdf?mtime=20150913180651](http://s3.amazonaws.com/ecgmc.com/images/How-to-Avoid-Death-by-Benchmarking_August-2015.pdf?mtime=20150913180651). Access on August 30, 2018.
8. Inverso G, Boualam N, Mahoney KB. The new age of private research funding: Be careful out there! *Healthcare Transformation*. 2017;2(2):52-56.
9. Hanson JA. The academic medical center exception to the Stark Law: Compliance by teaching hospitals. *Alabama Law Review*. 2010;61(2):373-390.
10. *U.S. ex rel. Villafane v. Solinger*, 543 F. Supp. 2d 678 (W.D. Ky. 2008).





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