

## Funds Flows in Academic Medical Centers

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### A Basic Overview

The flow of funds among components of academic medical centers (“AMCs”) are notoriously complex – and different across institutions. A common refrain is “If you’ve seen one AMC, you’ve seen one AMC.” This is for several reasons:

- An AMC consists of three key components: medical school (teaching and research), health system (hospitals and outpatient facilities), and a faculty group practice (“FGP”). But across AMCs nationwide, these components are owned and controlled in many different structures. In some AMCs like Michigan, Penn State and Miami, the University owns/controls all three components. In others like Virginia and Duke, the University owns the medical school and health system –but not the FGP. In others like Indiana and Northwestern, the University owns only the medical school. And in still others, like Minnesota, Colorado, Columbia and Washington University, the University owns or controls the medical school and FGP (“UM Physicians”) –but not the affiliated health system. Also, a small number of institutions like the University of Minnesota (“UMN”) operate a more comprehensive “Academic Health Center”—adding schools of nursing, pharmacy, dentistry and public health.
- Obviously, funds flows must vary based on these different structures. If (as at UMN), the health system does not own the FGP, then there is a major flow of funds as the health system must purchase doctors’ clinical and supervisory services in the hospitals and clinics from the FGP. In an AMC where the health system owns the FGP—this would be invisible internal budgeting, i.e. zero on the “funds flow” chart.
- Likewise, funds flows vary because at some AMCs, the medical school manages the residency (graduate medical education or GME) programs, employs the residents and pays their salaries and benefits (though this is becoming more rare). Then, the hospitals that receive the residents’ services reimburse the medical school. But at most AMCs, the health system employs the residents directly, so again, there is no associated “funds flow” to the medical school for resident salaries.
- Many other structural differences also matter, like who owns research buildings, which components purchase utilities or rent space from the other, whether State funds flow to the University, medical school or health system, and so on.
- Beyond these structural differences, funds flows differ across AMCs due to unique features of their history, level of research commitment, size, competitive situation and other factors.

### The Key Take-Away

The key to understanding overall AMC funds flows is to bear in mind that *all medical schools need net inflows or subsidies from the health system—whether that system is University owned or independent but affiliated*. Hence, major financial support for the medical school is *virtually always* received via

“mission support” payments from the health system, and a “Dean’s Tax” on faculty clinical practice. At an AMC the size of the University of Minnesota, this net support usually runs several hundred million dollars each year, year after year. That is in addition to services the health system purchases at fair market value.

### **Why Do Medical Schools Need Net Subsidies?**

Every medical school—even the most successful and efficient like that at the University of Minnesota—require such subsidies from the AMC’s clinical enterprise (health system and faculty practice). Why? Simple answer: because all their missions/activities except for one are destined to lose money. This is just the nature of the latent costs and funding processes.

- Medical school education keeps getting more expensive due to technology, complexity, the need for simulation labs, and accreditation requirements. There is enormous public pressure not to raise tuition—because it is already high and leaves many graduates with substantial debt. But tuition covers only a portion of the actual costs of educating physicians—so medical schools incur a loss on education.
- Medical school research also always incurs a loss, usually a substantial one. A study by the Association of American Medical Colleges in collaboration with Price Waterhouse Coopers found that for every \$100 of sponsored research a medical school conducts—it loses \$53. That means that one could predict that a medical school like the University of Minnesota Medical School (“UMMS”)—which has risen dramatically in the research rankings and is now about #21 of 140 medical schools in the nation, and conducts about \$300 M of research/year—must find some sources of funding for perhaps \$150 M in research losses year after year. The “return on investment” is new treatments and cures, improved health and saved lives. But the costs are real. Thus, paradoxically, the more research a medical school conducts, and thus the more eminent it becomes and the more able to recruit top students, residents, faculty and other health professionals—the more reliant it becomes on support from the clinical enterprise.
- Faculty practice can break and sometimes earn a small margin, but it is burdened by several public missions too. In addition to trying to be productive in clinical work faculty must teach medical students, mentor residents, oversee research, serve on hospital committees—and often staff community outreach and services to the underserved that are sure to incur losses. Many FPGs around the country incur massive losses year after year. The UM Physicians is more financially sound and usually at least breaks even.
- Hospitals and ambulatory sites are the main component of an AMC that is capable of earning a profit—and some earn large profits. There are a number of distinguished, major AMCs whose hospital systems earn 4% -6% or even 10%-12% operating margins, yielding many hundreds of millions each year. A few years ago, Indiana University’s affiliated hospital system was so profitable, it gave \$416 million to the medical school. BJC system gives Washington University’s Medical school 45% of all its operating margin—usually hundreds of millions. There are other examples as well. Unfortunately, UMMS’ major affiliate, Fairview, has not been financially successful. Its operating margins have declined for eight years—and it incurred losses beginning in 2019, continuing today, and cumulating to about \$1 Billion.

## **What Are the Major Elements of the Funds Flow in an AMC?**

As noted, AMCs all differ, but here are some of the main recurring funds flow elements:

1. Hospital Payment for Physician Services. These include payments for 24 x 7 staffing, medical direction of programs, supervising residents, and other services.
2. GME Administration. These are payments for the costs of Program Directors, Clerkship Coordinators and accreditation compliance.
3. Resident Costs. These are payments (e.g. from hospital to medical school where the latter is the "Sponsoring Institution" for residency programs) for resident salaries, fringe benefits and insurance.
4. DME and IME. These are payments for Medicare and Medicaid to the hospital only, for two kinds of costs of GME programs. Direct medical education payments ("DME") reimburse formulaically for the costs of residents in relation to the portion of total care provided to Medicare or Medicaid patients (rather than to privately insured patients). Indirect medical education ("IME") funds pay hospitals for part of the increased costs due to residents ordering more tests or creating the need for administrative work. The formula is based on a ratio of residents to beds. But for both IME and DME, the Centers for Medicare and Medicaid Services ("CMS") pays only for a numerical level of residents up to a "cap."
5. GME Costs Above the Cap. These are borne by hospital alone. But most teaching hospitals choose to employ residents above the cap because of their lower cost compared to nurses (residents often earn about \$60,000/year and work 80 hours/week. Nurses may earn \$80,000-\$120,000 and work less than 40 hours/week). Also, more residents enable physicians to be to be used more productively.
6. Sponsored Research. Much medical school research is supported by research grants from the National Institutes of Health ("NIH"), other federal agencies or the National Science Foundation (or private foundations). The grantee (medical school) may pay the hospital for use of equipment or other direct costs. Also, the federal agencies usually pay an "indirect cost rate" on top of the direct costs of the research project. This is to reimburse (hence "indirect cost recovery" or ICR) the medical school for some of the costs of University facilities and administration required for a research enterprise beyond an individual project.
7. Distribution of ICR. ICR may be paid in part by the University to other components, depending on which provided the facilities or other elements.
8. Unfunded Research. Medical schools often recruit promising researchers, who conduct research work before or in addition to that which receives grant funding. This work is sponsored/funded by the medical school itself.
9. Philanthropy and Restricted Funds. Generous people often fund gifts to the medical school, the health system, the faculty group practice or all of them. Sometimes the activity the gifts fund

traverses missions, so there are funds flows under the gifts. Restricted funds are used as per the donor instructions.

10. Tuition and Fees. These flow to the medical school.
11. UPL/IGT. These “upper payment limit” programs are complicated and controversial, but extremely common. In essence, a state or local governmental entity can provide support to the state Medicaid program, which then draws down federal matching funds under a formula, and such total additional funds are used to pay increased Medicaid rates ( “supplemental payments”) to certain providers essentially to increase access to the underserved. These are all defined under varying state Medicaid programs, and in Minnesota are called “directed payment”.
12. Faculty Recruitment Packages. Medical schools recruit Department Chairs, Division Chiefs and other physician leaders—who will perform services as Academic Chair and leader of a Department, and perhaps Service Chief at a Hospital, and perhaps academic/clinical/research leader of a program. Funding of these packages is often shared by the medical school and hospital.
13. Faculty Academic Work. This is funded by the medical school. Faculty are usually paid explicitly or implicitly under a “CARTS” methodology, where their 100% of work effort is allocated among Clinical, Academic, Administrative, Research and Service elements. Funds flows among medical school, faculty practice and hospital occur in order to accord with the planned effort distribution.
14. Faculty Clinical Practice. Money for the direct patient services provided to patients by faculty flows into the FGP (in UMN’s case, UM Physicians). However, in some cases such as capitated or other “population health” arrangements, a bolus of funds is paid to the health system, and then funds flow down to the FGP based on a formula or mutually achieved savings.
15. Dean’s Tax. The Deans tax exists at almost every medical school. It is the source of funds for basic medical school functions –the research and thing administrivia infrastructure that enables a faculty o function as such.
16. Hospital/Health System Mission Support to the Medical School. This is a subsidy to the medical school’s teaching and research programs –which attract more patients to the health system and thereby add to its profits.
17. Clinical Joint Ventures. Sometimes the FGP and health system create joint ventures to provide care in a shared faculty or service. At UMMC, the largest of these is the Clinics and Surgery Center (“CSC”)—a major ambulatory facility that is in many ways the ‘front door’ to UMMC. Its construction was funded and it is owned by UM. It is leased to a joint venture of UM Physicians and Fairview, and there are funds flows between them relating to it.
18. Hospital Inpatient Revenue. Third party payers and patients pay the health system for inpatient hospital services.

19. Hospital Clinic and Ambulatory Revenue. Clinics can be “hospital based” and then receive payments for both a “facility fee” and the physician services, or they can be “physician office based” and are paid only the latter. In the case of UMMC, most of the clinics are hospital based, and UM Physicians authorizes Fairview to bill and collect for both fees, and then pay funds to UM Physicians for their services.
20. University/Medical School Funds Flows. In AMCs generally, there can be many kinds of further payments such as: University budgeted funding of the medical school; allocation of endowment earnings; University charges to the medical school; agreed splits of ICR; payments for utilities; payments for use of “core” facilities such as IT systems and telecom; costs for space; and allocations of University overhead.
21. State Funding. Some states provide direct funding to the medical school, or there is “flow down” funding through the University. States also have funded medical school buildings.
22. Technology Transfer Related Funding. Technology transfer administration costs are usually borne by the medical school and/or University. Licensing revenue, or equity interest revenues are then usually shared based on University policy among inventors, their Department or unit, their school and the University.

Each AMC usually has various other funds flow elements that are an accretion of “special arrangements” made at a given time and cumulated over the years.

## **Conclusion**

AMC funds flows are not simple, rational and easily replicated across institutions. They are artifacts of complex health and education financing systems in the US, and the accumulation of historic arrangements in a given AMC. But they have funded important functions over many decades. So when they are modified, one must always consider the long term, second-and-third order impacts of the changes. And there is no doubt that the cost of excellence continues to rise.