Mission Aligned Management and Allocation: A Successfully Implemented Model of Mission-Based Budgeting

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Abstract

In response to declining funding support and increasing competition, medical schools have developed financial management models to assure that resource allocation supports core mission-related activities. The authors describe the development and implementation of such a model at the University of Wisconsin Medical School. The development occurred in three phases and included consensus building on the need for mission-based budgeting, extensive faculty involvement to create a credible model, and decisions about basic principles for the model. While each school may encounter different constraints and opportunities, the authors outline a series of generic issues that any medical school is likely to face when implementing a mission-based budgeting model. These issues include decisions about the amounts and sources of funds to be used in the budgeting process, whether funds should be allocated at the department or individual faculty level, the specific metrics for measuring academic activities, the relative amounts for research and teaching activities, and how to use the budget process to support new initiatives and strategic priorities. The University of Wisconsin Medical School's Mission Aligned Management and Allocation (MAMA) model was implemented in 1999. The authors discuss implementation issues, including timetable, formulas used to cap budget changes among departments during phase-in, outcome measures used to monitor the effect of the new budget model, and a process for school-wide budget oversight. Finally, they discuss outcomes tracked during two years of full implementation to assess the success of the new MAMA budget process.

In the early 1990s, medical schools began examining their budgeting processes to align their resource allocations with the fulfillment of their multiple missions. The Association of American Medical Colleges (AAMC) encouraged and supported schools' widespread interest in mission-based management (MBM) by creating forums for institutional leaders to share their variety of approaches, and several years later developed an operational framework.[1–3] Early efforts at conceptualizing and developing models of ways to link academic resources with faculty effort have been described to help other institutions develop their own resource-allocation plans.[4–10] The University Hospital Consortium initiated a related effort for identifying revenue streams ("funds flow") among schools and their related hospitals and practice organizations.[11]

Currently, approximately 25% of U.S. medical schools are working on the development of metrics to measure the teaching and academic activities of faculty.[12] However, relatively few have implemented systems that link the budgeting process with those metrics. At the University of Wisconsin Medical School, a method for alignment of resource allocation and academic mission has been developed and is in its second year of implementation. In this article, we report on the process of development, the model's successes thus far, and the lessons we learned in development and implementation.

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The Mission Aligned Management and Allocation Model

The University of Wisconsin Medical School's annual operating budget is approximately $300 million (2000-2001), including university and state funding, extramural grant support, hospital support, and practice plan contributions. Of these funds, the school has direct control over around $70 million received from the university/state and from the practice plan. Approximately two thirds, or $47 million, of these funds are allocated to the school's 25 departments and one third to support such school-wide needs as facilities, libraries, animal care, and administration. The mission-aligned model is applied to the entirety of the $47 million departmental allocation and not to any other school funds. Allocations to departments are based on quantification of their contributions to education, research, service, and school strategic priorities.

Development

Between 1994 and 1996, a variety of forces prompted the University of Wisconsin Medical School to explore resource alignment and accountability models, eventually naming its plan Mission Aligned Management and Allocation (MAMA). Those forces included the appointment of a new dean, a lean prognosis for the adequacy of existing resources, growing skepticism about the longstanding budget model, and the appointment of many new chairs and other leaders. The school's 14 clinical practice partnerships unified to become the University of Wisconsin Medical Foundation in 1996, founded on principles of accountability, productivity, and academic mission.[13] This not-for-profit organization contributes a portion of its revenue to the school and sought a rationalized method for its distribution. For all of these reasons, the context for change was favorable.

The dean of the medical school initiated planning for mission-aligned budgeting in 1995, emphasizing that "process is as important as product."[14] Despite initial support for the concept, three phases of planning for implementation were

needed until a final product garnered sufficient acceptance from the various constituencies within the medical school.

Phase 1. A task force representing the school's many constituencies was assembled in 1995. After a year of work, the task force achieved consensus around acceptable measures of academic activity (research awards, lectures, mentoring, etc.) but fell short of an operational model suitable for implementation. Most significantly, this group established principles that eventually served as a guiding force for future model development. In addition, the first phase involved approximately 100 faculty (including department chairs) who, through informal and formal communication, began the cultural transformation that proved essential to achieve faculty "buy in" and successful implementation.

Phase 2. During Phase 1, it became clear that although the school had a strategic plan in place, more effort was needed to delineate priority programs eligible for preferential allocation of discretionary funds. A second task force, consisting of a subset of chairs and associate deans, worked in 1998 to refine the initial ideas, identify the need for predetermined strategic priorities, and build a climate for greater acceptability for mission-based resource allocation. This group established that departments rather than individual faculty should receive budget allocations, and began to quantify curriculum components for a complex educational program. The task force set the stage for definitive model development, which occurred in the subsequent academic year.

Phase 3. A steering committee of 16 leaders, chaired by the dean with equal numbers of basic science chairs, clinical science chairs, associate deans, and faculty at large, was convened for the final phase of the process. The faculty included members of the medical school's governing body, the Academic Planning Council—our university-designated "official" governance body. Subcommittees increased the total number of faculty involved to over 60. The group worked for approximately six months, and in July 1999 completed an operational model that was implemented in July 2000. The model has been the sole basis of departmental allocations of medical school funds for the 2000-2001 and 2001-2002 budgets.

Description of MAMA

Each year the school calculates the portion of its total budget, derived from university/state support and the faculty practice plan contribution (sometimes referred to as the "dean's tax" at various institutions), to be allocated to departments. This amount is then divided into five categories: education, research, faculty, leadership development, and dean's discretionary funding, and allocated as follows:

- Sixty percent to education, based on department contributions to medical student, graduate study, allied health, and undergraduate teaching
- Twenty percent to research, based on extramural funding and salaries received from grants
- Ten percent to academic service, based on a per-capita distribution
- Ten percent at the dean's discretion, based on alignment with the school's strategic priorities
- Two percent to leadership activities such as sponsorship of training programs and participation on key school committees (these funds are a subset of the funds allocated to education)

There are several other features of the plan:

- Only academic funds originating in the medical school are allocated, thus excluding extramural or hospital support.
- Each department develops its own allocation methods for distributing these funds to its infrastructure, programs, and facilities, and for faculty compensation.
- Implementation is phased over three years.
- Credit is awarded for faculty effort that crosses departmental lines, such as interdisciplinary courses and research grants.
- Strategic priorities influence allocations of the dean's discretionary category.
- An oversight committee adjudicates disagreements over application of the model or major policy issues.
- The dean and associate deans evaluate the entire model at two-year intervals.
- Allocations to departments are unrestricted, and chairs have flexibility (within the guidelines of their compensation plans) for allocation of funds to individual faculty.
- There is no faculty self-reporting of academic activity.
- There is a commitment to avoid unintended consequences by monitoring and adjustment.
- The model's content is transparent to faculty members.
- There are no large shifts of resources between basic science and clinical science departments.

Decision making to create the model

Mission-aligned budgeting processes require critical decision making around a limited number of issues. The resolution of each issue is described below.

Scope of funds for allocation. The spectrum for potential resources to be included in mission-aligned models is broad, from discretionary, special funds for particular purposes to the inclusion of all funds over which the school has some influence. The Phase 1 plan restricted mission alignment to funding for faculty salaries. However, a consensus developed that all medical school funds provided to departments should be subject to the model in order to strengthen its impact on academic productivity and not create a perception of "protected budgets." Of the $70 million in funds directly controlled by the dean's office, approximately one third are used for school-wide purposes such as libraries, animal care, facilities, and information technology. It was considered practical not to submit these expenditures to a mission-aligned model but rather to annually evaluate them to assure that they support the mission. All other funds, such as grants and hospital support, were already restricted in use. At the University of Wisconsin–Madison, student tuition is paid directly to the state of Wisconsin, returned to the university, and becomes one source of the university's allocations to its schools and colleges.

Relationship to strategic planning. A major obstacle to faculty acceptance of

mission-aligned budgeting was the perception that it would either encourage academic activity in a random, indiscriminate manner or carry a strong bias toward status-quo activities. The school had previously undertaken strategic planning, but not comprehensively or linked to budgeting. In 1997, the dean established a faculty task force to develop strategic priorities. It identified six major strategic priorities, since expanded to ten, that form the centerpiece of the school's strategic plan and serve as a guide for mission-aligned budgeting.[14]

Allocation of funds to departments or to individual faculty. Early on, some questioned how a model solely allocating resources from the school to departments could have an impact on the alignment of academic work with mission, as teaching and research are primarily individual behaviors. A very creditable, precise system might be in place for delivering resources to departments, but if they continued their current methods of compensation to individual faculty—often based more on historic factors than an alignment with the academic mission—the entire purpose of the exercise would be frustrated.

The steering committee decided that the model should measure each department's academic activity in aggregate, and should allocate school funds to departments on this basis. Departments of the University of Wisconsin – Madison enjoy a strong tradition as the academic and financial home for faculty, and it was concluded that department chairs were best able to judge the individual academic efforts of their diverse faculties. In fact, MAMA takes advantage of chair leadership and has increased the chairs' authority. Also, there was trepidation about using the MAMA model to develop a school-wide individual compensation model—a "one size fits all" model for 1,200 faculty—which would require an exponential increase in the model's complexity. Instead, the chosen model measures departmental academic activity in the aggregate, and funds are transferred from the school to the department on an unrestricted basis, allowing the department chair and executive committee discretion in how academic work and compensation are distributed among department faculty.

The question remained, however, of how to obtain alignment at the individual faculty level. The steering committee concluded that departments should replicate the model's principles in their compensation plans and other allocation mechanisms. Department compensation plans must adhere to guiding principals established by the school and the practice organization and are subject to approval by the school's compensation committee. This combination allows flexibility across departments while still providing assurance that school-wide strategic priorities are met.

Proportions of funds allocated to education and research. The model called for annual creation of separate funding pools for education and research, which are then each distributed to departments. One initial and very important question was how to determine the relative sizes of the two pools.

The steering committee decided on a three-to-one ratio for allocation of funds to education and research. This ratio was chosen for a number of reasons, including the acknowledgement that education is supported primarily through tuition and state revenues, and has no other significant source of funding. Research is expected to be predominantly supported from extramural sources at the University of Wisconsin Medical School. The ratio was analyzed through a number of empiric measures that attempted to determine the magnitude of revenues needed to support the teaching mission of the medical school. This exercise was complicated by the fact that it is difficult to separate faculty activity into discrete categories of "teaching, research, service, and clinical practice" and that the indirect costs for teaching have not been well defined. Three separate empiric approaches were used to determine the magnitude of funds allocated to the educational mission: (1) calculation of the faculty fulltime equivalent (FTE) requirements for the number of credit hours offered by the school based on university FTE teaching standards; (2) calculation of the faculty's teaching-contact hours using a relative-value-unit factor; and (3) analysis of tuition recovery. These three calculations approximated an absolute cost for education that allowed a consensus to form around the three-to-one ratio for education-to-research funds. This ratio was established firmly before any departmental modeling exercise was performed—a sequence that proved essential when some departments that were found to have budget "gaps" asked to change from a 3:1 ratio to a ratio more favorable to them.

Measurement of academic activity. Methods to measure academic activity were studied and debated intensively during all three phases of model development. These methods included faculty contact hours, revenues generated by research and clinical practice, a relative-value system for weighting academic activity, and individual reporting of comprehensive activities such as publications, presentations, and committee work. The medical school already had access to data that measured academic activity at the department level: courses and clerkships offered by each department, numbers of graduate students, extramural research awards, and numbers of faculty, including those participating in mission-related leadership activities. The steering committee selected global measurement criteria of departmental academic activity, as shown in List 1.

List 1

Measurement Criteria for a Faculty Member's Academic Activity, University of Wisconsin Medical School, 2001

Courses and clerkships, based on credit hours and enrollment

Mentorship of doctoral students

Extramurally funded research

Faculty salary support obtained from extramural sources

Participation on major academic committees

A global "service" allocation based on number of faculty in each department

Leadership roles for training programs

These measures were described as proxies for academic activity; exclusion from this list did not represent devaluation of a particular faculty member's work. For example, productive research can be done without extramural funding, but it is difficult to measure and therefore was not chosen as an allocation criterion. Rather, the assumption was made that departments with funded research programs could choose to use portions of their MAMA support for unfunded research. Publications and similar activities were an expected outcome of the measured academic activity, and thus were not an allocation criterion. These benchmarks were expected to be determined at the department level, based on individual faculty roles, and incentives could be created through individual department compensation plans.

The steering committee and the dean were firmly committed to this level of specificity and have resisted attempts to include efforts at a highly detailed level, many of them requiring faculty self-reporting. These measures will be refined and improved with actual experience.

Resource allocation versus resource identification. The option of developing a medical center funds-flow model (encompassing university, hospital, and practice organization funds) was thoroughly considered,[8] either in addition to or in lieu of mission-aligned allocation. In order to create a well-defined, achievable end product, the school elected to defer consideration of a medical center funds-flow model and instead focus all energies on tight linkage between academic mission and resource allocation, with a specific target date for implementation. The three medical center entities recognized the need for improving the factual basis for the considerable amount of funds they exchange, and progress will continue on the most important of these.

Implementation timetable. The dean directed that a mission-aligned budget model be initiated in the first fiscal year after the steering committee completed its work and fully implemented after a three-year phase-in period. This became a useful parameter for compressing the group's work and encouraged the use of readily available and verifiable data sources in the MAMA model.

Formula budgeting versus leadership flexibility. The need for a more transparent, quantitative resource-allocation model was obvious, and the measures chosen on which to base the allocation—course direction, lectures, mentoring of graduate students, etc.—were indisputable means of doing so. Some faculty leaders suggested perfecting this method and using it to allocate the entire budget of the school.

However, during Phase 2, department chairs emphasized that the leadership expected of the dean's office would be undermined by a formula that modeled 100% of all funds. The chairs clearly stated that the dean needed a source of strategic funds to enhance mission outcomes and stimulate change. Without some strategic funds under the dean's discretion, the school's need to support emerging areas of research and learning might be forfeited and along with it the dean's negotiating influence with chairs. There was also a perception that however refined the model became it could never respond to all valid needs of the learning community. Some level of dean's discretion could make the model responsive to unmeasurable needs of an extremely complex organization.

The solution to this dilemma was an additional category, the Academic Discretionary Fund, equal to 10% of the total allocation to departments. It is completely at the dean's discretion to allocate to departments and is heavily weighted toward strategic priorities.

Measuring the product. Outcome measures have been defined to allow evaluation of the model's impact at the completion of the third year of implementation, including teaching quality before and after MAMA, extramural research support, salaries supported by extramural sources, the tendency for faculty to seek teaching roles, and others.

Including graduate medical education (GME). Because GME is a major teaching activity for most clinical departments, there was initial interest in using it as a basis of allocating school funds. However, because funding support for GME rests solely with the school's affiliated hospitals, it was decided to continue treating support for GME as a funds flow between departments and hospitals, and to assure that this funds flow would also be reassessed to assure fairness and mission alignment.

Implementation without destabilizing departments. The model in its pure form required redistribution of funds among departments, and while no department's critical mass of funds was threatened, more movement of funds was prescribed than could be immediately accomplished. Implementation will occur over three years, and as departments reorient their academic activity, substantial compliance should be achieved. A formula limits a department's maximum annual loss to the lesser of two amounts: one third of the formula-derived reduction, or 3% of the department's revenue from all sources.

Avoiding manipulation of the model and adjudicating disputes. A faculty committee, advisory to the dean, was established during the first year of model implementation. It was acknowledged that no budget model would ever perfectly reflect all academic work. Therefore, the MAMA Oversight Committee was established to review and revise the model as issues arose during implementation. The committee was appointed by the medical school's governing body, the Academic Planning Council, and chaired by the senior associate dean for academic affairs. During the first year of implementation, a number of questions were reviewed that resulted in revisions or clarifications to the model.

Discussion—Measures of Success

The University of Wisconsin Medical School's experience with mission-aligned budgeting has been positive to date; the model is now in the second year of implementation. There has been evidence of increased academic productivity at both the department level and the individual faculty level. Even in the early phases, it became clear that department chairs and faculty were motivated to obtain more resources—or prevent loss of resources—by engaging in activities that earned more support under the MAMA plan. For example, discussion at department meetings began to focus on how to place more salaries on grants and involve more faculty members in teaching. One advantage of the department-linked MAMA method is that the role of the department chair as a

manager and motivator has been strengthened. In addition, the chairs can now reinforce faculty accountability to the medical school. They have emphasized, with dean's office guidance, encouraging their faculty to "close MAMA gaps" by methods shown in List 2.

Other changes have been correlated with the MAMA plan's implementation. Course directors have reported that it has been easier to recruit faculty for medical student teaching. There is new interest and energy from faculty for educational programs, as evidenced by a number of new courses and clerkships that have been proposed. For example, a new clerkship in radiology and an integrated neurosciences clinical clerkship have been approved. Increased research productivity has been correlated with the implementation of MAMA. When compared with the pre-MAMA plan base year (1997), total research awards to medical school departments and research awards to clinical departments have both increased by 25% in three years.

Concomitantly, some "gaming" of the system has already been evident, including strenuous vying for curriculum time. A checks-and-balances system has been developed to try to shield the educational mission from mercenary goals. The Educational Policy Council (curriculum committee) operates separately from the MAMA Oversight Committee and is charged with the responsibility of maintaining curriculum standards and quality. The Educational Policy Council has defined a limit on the number of credit hours and contact hours that will be available for medical student teaching each semester, to limit the tendency for additional courses to enhance department revenues rather than to support the academic goals of medical education. The council has developed competency standards for each year of medical education and is planning for ongoing curricular revision without consideration of budget implications. The MAMA Oversight Committee is charged with phasing in implementation of budget changes that result from curricular revision, ideally separating the educational standards from direct influence of departmental budget considerations.

Despite the three-year implementation plan there is still work to be done, as the MAMA model is considered a work in progress. Further refinement of longitudinal outcome measures is occurring to help assess whether the mission-aligned budgeting process has indeed helped to achieve the school's mission-related goals and strategic priorities. More specific measures of quality, especially in teaching, are being developed for courses and clerkships, including position descriptions for course and clerkship directors. The credit hour and enrollment measures for education are good approximations of contact hours, but are unduly influenced by the number of small groups that are offered within courses, and refinement of these measures is under discussion. Finally, the clinical practice plan and the university hospital are working on plans to align their resources more closely with activities that support their core missions. This last step has always been anticipated so that departments can respond to mutually compatible reward systems from the school, hospital, and practice organization.

List 2

Methods for Departments to Close Gaps in the Mission Aligned Management and Allocation System, University of Wisconsin Medical School, 2001

Provide more instruction in more courses

Participate in more education leadership roles

Allow attrition (don't fill faculty vacancies)

Attract graduate students

Use gift funds

Obtain more salary support from grants

Prepare more grant proposals and receive more awards

Provide service on targeted committees

Contribute activities that match strategic priorities

Create named professorships

Conclusion

The MAMA budget process at the University of Wisconsin Medical School has helped focus attention on the school's prime mission and strategic goals and helped define the roles of departments and individual faculty in achieving those goals. It has given the school, especially the dean's office and department chairs, a tool for motivating behavior in support of the academic mission and allowed all constituencies to see how the school's resources are allocated. While the initial outcomes have been positive at this stage of the second year of implementation, careful monitoring and refinement are necessary to ensure that the alignment of the budgeting process with academic mission is truly helping the University of Wisconsin Medical School achieve its mission of meeting the health needs of Wisconsin and beyond through excellence in education, research, patient care, and service.

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